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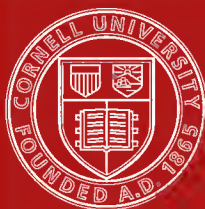
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IDIOCY:

AND

ITS TREATMENT

BY THE

PHYSIOLOGICAL METHOD.

BY

EDWARD SEGUIN, M.D.



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P R E F A C E .

TWENTY years have passed away since the publication of any treatise on the treatment of idiots.* This period has been appropriately filled by the practical labor of founding schools and endowing public institutions for these children. The preceding period had been occupied by the framing of the physiological method of education ; and the next period will be devoted to new studies on the subject.

This present time seems therefore particularly favorable for the writing of a book embodying—1st. Our present knowledge on idiocy ; 2d. The method of treating idiots ; 3d. The practice of the same ; and 4th. An outline of the direction to be given to the scientific efforts of the friends of idiots, and of the apostles of universal education.

Deprived of language by voluntary change of nationality, and engaged in the fulfilment of private duties, we did not take our share in the treatment of idiots in this Republic ; but we were never distant from the subject, and we reëntered it as soon as circumstances permitted.

We accepted the hospitalities of the New York Institution

* While these pages are passing through the press we are apprised of the publication of the treatises of Drs. Down, Duncan, and Millard, to which we are happy to give a place in our bibliographic list.

as one of our means of study. The superintendents of all the schools for idiots, and one of their trustees, tendered their assistance in the shape of liberal subscriptions ; William Wood undertook the publishing, though knowing that it could not be of pecuniary advantage ; and Dr. E. C. Seguin revised the work with the double object in view of saving its language from our Gallicisms and from commonplace corrections : cheerless task for any one but for a tender and dutiful son, in doing which, he has fathered the last-born of the mind of his father. Unhappily, towards the close of the work, it became necessary, on account of his health, to leave for Europe, so that the defects left therein will be ours.

NEW YORK, May, 1866.

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There have been, no doubt, many other valuable publications on the subject; for instance, the Essays of Dr. J. Conolly and Dr. Twining, but we have not been able to obtain them. To these must be added the Annual and other Reports of the various Institutions for Idiots in this country and abroad.

IDIOCY, AND ITS TREATMENT.

INTRODUCTION.

IDIOTS have been educated in all times by the devotion of kind-hearted and intelligent persons, and with the best means they could borrow from ordinary schools; until the progress of physiology opened the possibility of the adaptation of its principles to the general training of children. But other elements were mature. The right of all to education was acknowledged, if not yet fulfilled with the imperfect means at command; the deaf and the blind were already instructed by special methods; and several children, marked by nature, accident, or crime, with the characters of idiocy, had been subjected to physiological and psychological experiments. Can idiots be educated, treated, improved, cured? To put the question was to solve it.

There is a sort of mysterious upheaval of mankind in the way new things spring up, which commands our awe. At a given hour, anything wanted by the race makes its appearance simultaneously from so many quarters, that the title of a single individual to discovery is always contested, and seems clearly to belong to God manifested through man. The origin of the methodical treatment of idiots,

though apparently of secondary importance, is nevertheless one of these necessary events, coming when needed for the co-ordination of progress. Nothing can give a better instance of the simultaneity of feeling this new idea encountered, than the readiness with which all nations encouraged the formation of schools for idiots, and the unconcerted unanimity of language elicited at the foundation of these establishments by minds separated otherwise by vast intellectual distances.

It was our fortune to be a guest at one of these solemnities, where individuals certainly spoke more the language of mankind than their own; manifesting clearly wherefrom the spirit of the occasion came. It was at the ceremony of the laying of the corner-stone of the first school built expressly for idiots in this country, at Syracuse, New York, September 8th, 1854.

The Rev. Samuel J. May began in these terms: "Twenty-five years ago, or more, in the early days of my ministry, I encountered, as every man who thinks at all must sooner or later encounter, the great problem of the existence of evil—the question, how the Good God, the Heavenly Father, could permit his children of earth to be so tempted, tried, and afflicted as they are. I was unable to avoid this perplexing subject; so I met it as best I could, in full faith that the wisdom and goodness of God will be justified in all his works, and in all his ways, whenever they shall be fully understood.

"I endeavored to lead my audience to see what, in almost every direction, was very apparent to myself, that evil is a means to some higher good; never an end; never

permitted for its own sake, certainly not for the sake of vengeance.

“I was able easily to trace out the good effects of many evils; to show how they had stimulated mankind to exertion and contrivance, physical and mental; to tell of the discoveries, inventions, and improvements that were the consequences. In particular, I dwelt upon the sad privations those individuals are subjected to who were born deaf or blind. The institution of the Asylum for the Deaf and Dumb, at Hartford, was then of recent date, and a school for the blind was said to have been opened in Paris. These institutions were then of great interest to the philanthropist; and I found no difficulty in showing that the philosophy of mind, and the science and art of education in general, had been much improved by the earnest and successful endeavors which benevolent persons had made to open communications with the minds and hearts of persons deprived of one or more of the most important senses.

“But there was idiocy—idiocy so appalling in its appearance, so hopeless in its nature; what could be the use of such an evil? It were not enough to point to it as a consequence of the violation of some of the essential laws of generation. If that were all, its end would be punishment. I ventured, therefore, to declare with an emphasis enhanced somewhat, perhaps, by a lurking distrust of the prediction, that the time would come when access would be found to the idiotic brain; the light of intelligence admitted into its dark chambers, and the whole race be benefited by some new discovery on the nature of mind. It

seemed to some of my hearers, more than to myself, a daring conjecture.

“Two or three years afterwards I read a brief announcement that in Paris they had succeeded in educating idiots. I flew to her who would be most likely to sympathize in my joy, shouting, ‘Wife, my prophecy is fulfilled. Idiots have been educated.’”

When men are gathered together for a common purpose, their object being common, their minds become blended; they cease to think as many; the same idea flows from all brains. So was it at this ceremony. Dr. H. B. Wilbur, Gov. W. Hunt, the Hons. E. W. Leavenworth, C. H. Morgan, James H. Titus, the steadfast friends of the new institution, spoke in the same strain. Letters from involuntary absentees, Gov. J. C. Spencer, Simeon Draper, Wm. H. Seward, breathed the same spirit. Dr. S. G. Howe’s happy words concluded: “The institution whose foundation-stone is to be laid, will be like a last link in a chain—it will complete the circle of the State’s charities, which will then embrace every class whose infirmities call for public aid. It has long included the deaf mutes, the blind and the insane, and it is now to include the idiots—a class far, far more deplorably afflicted than either of the others.

“The ceremony will be fleeting and soon forgotten; the building itself will in time decay, but the institution will last while the State lasts; for when the people once recognize the claim of any class of unfortunates, there is no fear of their ever repudiating the debt of charity. The bonds lie deep in the heart of humanity

as the foundation-stone you now lay lies deep in the bosom of the earth."

Even we, though a stranger, unable to appreciate the elevated tone of these aspirations, were rendered capable of expressing cognate feelings by the contagious influence of the engrossing topic. We said: "God has scattered among us, rare as the possessors of talent or genius, the idiot, the blind, the deaf mute, in order to bind the talented to the incapable, the rich to the needy, all men to each other, by a tie of indissoluble solidarity. The old bonds are dissolving; man is already unwilling to contribute money or palaces for the support of indolent classes; but he is every day more ready to build palaces and give annuities for the indigent or infirm, the chosen friends of Jesus Christ. To see that stone, token of a new alliance between humanity and a class hitherto neglected, is the greatest joy of my life; for I, too, have labored for the poor idiot. . . ."

These were a few of the transient expressions of the lasting feeling evinced at that memorable meeting. Once awakened in our bosoms, these feelings live for ever, and our actions are only their translation in deeds and monuments.

To render these feelings into facts, one nation after another has acknowledged its duty towards the idiot. In Switzerland, Dr. J. Guggenbühl began to study Cretinism in 1839, and opened his school on the Abendberg in 1842, simultaneously with that of M. Saegert, at Berlin; both, it is said, without having any knowledge of our practice, or of our four successive pamphlets on the treatment and

education of idiots, already published and exhausted. In 1846, Dr. Kern established a school at Leipsig; and the writings of Drs. A. Reed, Twining, and J. Conolly, gave birth to the first English institution at Bath. In 1848, Sir S. M. Peto devoted his own mansion, Essex Hall, Colchester, to the same destination. Scotland opened her first institution in 1852; and in June, 1853, was laid by Prince Albert, the corner-stone of the school of Earlswood, Surrey. Nearly all the nations of Europe followed these examples.

As early as 1842-3, Horace Mann and George Sumner had become familiar with our personal labors at Bicêtre, on which they wrote approvingly, sending over the seeds which soon rose from American soil. Dr. S. B. Woodward, Dr. Backus, of Rochester, New York, Judge Byington, Dr. S. G. Howe, Dr. E. Jarvis, and Dr. H. B. Wilbur, all of Massachusetts, were the first to move the public opinion or the Legislatures of their respective States. Indeed, Dr. Backus went so far as to report a bill to the Senate, at Albany, on the 13th of January, 1846, for the purchase of a site, and the erection of suitable buildings, for an asylum for idiots. This bill passed the Senate, and was at first concurred in by the Assembly, but subsequently rejected on political grounds. In 1847, it met with a similar fate. Massachusetts, a few days behind New York at the start, succeeded sooner. The 22d of January, 1846, the Hon. Mr. Byington offered a resolution to the Legislature, for the appointment of a commission to investigate the condition of idiots in that State. The resolution passed the House; Dr. S. G. Howe, Judge Byington, and

G. Kimball, were appointed Commissioners. Their report was favorable to the formation of an experimental school for idiots, which was opened in October of the same year, and remains in its permanent organization under the able supervision of Dr. Howe.

But private enterprise moves faster than political bodies. Dr. H. B. Wilbur had already opened in July, at Barre, Massachusetts, the private institution which he left only at the call of the State of New York, and which Dr. George Brown has since so successfully conducted.

In 1851, the State of New York established an experimental school at Albany, for which the services of Dr. Wilbur were secured. The result of this experiment, purposely carried on under the eyes of the Legislature, was so satisfactory that a permanent State institution was erected in 1854.

In 1852, a private school had been founded in German-town by Mr. J. B. Richards, which soon became the "Pennsylvania Training School for Idiots," at Media. The States of Connecticut and Ohio opened their institutions, respectively, in 1855 and 1857; Kentucky in 1860; and Illinois in 1865. Thus the United States has eight of these schools, in which nearly one thousand children are constantly in training. And this is only a beginning. All the Western and Southern States will soon possess similar establishments; and the city of New York, with its immense suburbs, cannot much longer send its idiots to the northern climate of Syracuse, depriving them of the warmth of the sea-shore, and of the visits of their friends. But more, New York city must have its institution for

idiots, because it contains the mature talents and growing capacities in all the branches of human inquiry, whose concurrence must be insured to perfect the method of treatment of these children, and to deduce therefrom the important discoveries justly expected in anthropology.

If we turn our attention from these monuments of philanthropy to the filiation of the abstract idea realized by their erection, we see a spectacle more imposing still. That idea of finding modes of training, natural and yet powerful enough to bring into physiological activity impaired functions, and even atrophied organisms, did not come directly into the human mind. Like nearly all discoveries, it came by side-views of the problem, till a man looking at it in full face solved it by a mighty effort.

Thus the institutions for deaf mutes of Paris, Gröningen, Bordeaux, Hartford (Conn.), etc., have been cumbered from their beginning with applications for the admission of idiots, and have kept the record of the improvement of some of them, educated side by side with the deaf, by the ordinary process of teaching; trials dear to charity, like those of private individuals, but deprived of philosophical import. On the other hand, how often children, rendered artificially idiotic or imbecile by ill-treatment and isolation in many forms, have excited the pity of their age, and thereby were made recipients of the care of the most philosophical minds. Everybody will discriminate between these two antecedents; the former doing good to individuals, the latter preparing the way for the discovery.

The record of these latter children is scant as well as imperfect, extending to a period in which scientific observa-

tion was nearly unknown. We owe to the great Linnæus a list of ten of these phenomena which he, curiously enough, considered as forming a variety in the genus Homo. We are indebted to Bonaterre, Professor of Natural History in the Central School of the Department of the Aveyron, France, for his quotation of it, for curious researches upon each one of these ten savages, and for his own notice of the eleventh, "the Savage of the Aveyron." We transcribe from our own copy of that extremely rare pamphlet.

1st. *Juvenis Lupinus Hessensis*. 1544. (A young man found in Hesse among wolves.)

2d. *Juvenis Ursinus Lithuanus*. 1661. (A young man found among bears in Lithuania.)

3d. *Juvenis Ovinus Hibernus*. Tulp. Obs. IV. (A young man found among wild sheep in Ireland.)

4th. *Juvenis Bovinus Bambergensis*. Camerar. (A young man found among herds of oxen near Bamberg.)

5th. *Juvenis Hannoverianus*. 1724. (A young man found in Hanover.)

6th. *Pueri Pyrenaïci*. 1719. (Two boys found in the Pyrenees.)

7th. *Puella Transisalana*. 1717. (A girl found in the Dutch Province of Over-Yssel.)

8th. *Puella Campanica*. 1731. (A girl found in Champagne and since named Mlle. Leblanc.)

9th. *Johannes Leodisensis*. Boerhaave. (John of Liège.)

10th. *Puella Karpfensis*. 1767. (The girl of Karpfen.)

11th. *Juvenis Averionensis*. Anno Reipublicæ Gallicæ octavo. (The savage of the Aveyron, in the year eighth of the French Republic.)

It would be curious, but unprofitable, to follow the scanty traces of method and education left in the legends concerning the ten first cases. "Such was," says Itard, "in those remote times the defective march of studies, the mania of explanation, the uncertainty of hypothesis, the exclusiveness of abstract thinking, that observation was set at naught, and these precious facts were lost for the natural history of man." But the rooted faith in which Itard himself was an adept, that if a true savage—meaning a savage, savage even to savage tribes—could be found, his education would evidence the natural springs of the human mind, obliterated in us by artificial culture; that faith, which lighted before the psychologist the same *Ignis Fatuus* that the philosopher's stone raised before the alchemist, gives a sure guarantee that none of the means those times could afford were spared to develop the faculties long dormant in these unfortunates, under the cover of animal instinct and habit. But we have to come to the eleventh case, that of the Savage of the Aveyron, to emerge from fiction into history; there we begin to feel that we are on scientific ground. The first part of his biography, written previously to his education by the man of clear and simple talent already named, Prof. Bonaterre; and the second and third parts by his inimitable teacher, constitute the most complete record of any such case.

Prof. Bonaterre represents his *protégé* as unused to our food, and selecting his aliments by the smell, like the savages of Ireland, Hanover, and Liège; lying flat on the ground, and immersing his chin in the water to drink, as did the girl of Chalons in Champagne; and like her

tearing all sorts of garments and trying constantly to escape; walking often on all fours, like the boys of Ireland, Hesse, and Bamberg; fighting with his teeth, like the savages of Lithuania and Bamberg; giving few marks of intelligence, like the Lithuanian child; having no articulate language, and even appearing devoid of the natural faculty of speech, like the savages of Ireland, Lithuania, and Hanover; kind, complaisant, and pleased at receiving caresses, like the girl of Over-Yssel. The Professor also thought that,* “a phenomenon like this would furnish to philosophy and natural history important notions on the original constitution of man, and on the development of his primitive faculties; *provided that the state of imbecility we have noticed in this child does not offer an obstacle to his instruction.*”

With this remark, Bonaterre left the boy in the hands of “that philosophical institutor, who has accomplished so many prodigies in this class of teaching; and it is to be expected that the child just confided to his care, may some time become the emulator of Massieu, Fontaine, and Mathieu” (noted deaf mutes taught in the school of Paris).

This institutor, Sicard, had succeeded the Abbé De L’Epée, and Bonaterre thought him the man to perform upon this savage the miracle dreamed of by De Condillac. But he was mistaken; Sicard soon tired of the uncouth being who was throwing away his clothes, and trying to

* Bonaterre; Notice Historique sur le Sauvage de l’Aveyron. Paris: 1799. P. 50.

escape even by the windows; and left him to wander neglected in the halls of the school for deaf mutes. But the child had been seen by all Paris. If the crowd of visitors found him an object of disgust, he continued to excite among thinkers a lively interest. Some of those who had held converse with Franklin and Thomas Paine on the momentous questions of the closing century, were still living; and by them the subject was brought before the Academy, where it produced exciting discussions, in which two men were prominent: Pinel, Physician-in-Chief to the Insane at Bicêtre, who declared the child idiotic; and Itard, Physician of the Deaf Mute Institution, who asserted that he was simply wild, or entirely untaught. This discrepancy of opinion is thus summed up by the latter.*

“The Citizen Pinel established between several children of Bicêtre, irrevocably struck with idiotism, and the child object of our present study, the most rigorous analogies, which would necessarily give for result a perfect identity between those young idiots and the savage of the Aveyron. That identity was leading to the conclusion that, affected with a malady to this time looked upon as incurable, he was not susceptible of any sort of sociability or instruction. It was accordingly the conclusion drawn by the Citizen Pinel; which he, meantime, accompanied with the expression of that philosophical doubt spread in all his writings, and to be found in the previsions of any man who appreciates the results of the science of prognosis, only as a more or less certain calculus of probabilities.

* Itard, De l'Éducation d'un Homme sauvage. Paris. 1801. Pp. 14, 15.

“I did not partake this unfavorable opinion; and, despite the truthfulness of the tableau, and the closeness of resemblance, I dared to conceive some hopes. I founded them on the double consideration of the *cause* and the *curability* of that apparent idiotism.”

Itard, not believing idiocy curable, contrary to the misgivings of Bonaterre, and to the all but convincing demonstrations of Pinel, undertook this education. In devoting himself to this case, his object was not to improve or cure an idiot; it was “to solve the metaphysical problem of determining what might be the degree of intelligence and the nature of the ideas in a lad, who, deprived from birth of all education, should have lived entirely separated from the individuals of his kind.” Itard embodied this programme in five propositions:

“1st. To endear him to social life, by making it more congenial than the one he was now leading; and, above all, more like that he had but recently quitted.

“2d. To awaken his nervous sensibility, by the most energetic stimulants; and at other times by quickening the affections of the soul.

“3. To extend the sphere of his ideas, by creating new wants, and multiplying his associations with surrounding beings.

“4th. To lead him to the use of speech, by determining the exercise of imitation, under the spur of necessity.

“5. To exercise, during a certain time, the simple operations of his mind upon his physical wants; and therefrom derive the application of the same to objects of instruction.”

For more than a year Itard followed this psychological

programme, perfectly well adapted to the education of a savage. But he seems, after this time, to have suspected that there were other impediments besides savageness in his pupil; for, though he never formally acknowledged it, he framed, about 1802, an entirely new programme, more fitted for an idiot than for a savage, whose foundation was physiology, and whose generality embraced:

“1st. The development of the senses.

“2d. The development of the intellectual faculties.

“3d. The development of the affective functions.”

This evolution of the mind of Itard, founded, no doubt, upon a secret consciousness of his error in diagnosis, forced him to link his labors to more scientific traditions. Therefore we cannot very well proceed in the narration of the history of his idea, without tracing it back to its origin.

Since Morgagni, Boerhaave, Haller, had brought physiology to its proper place, that is to say, ahead of all other medical sciences, it had been considered and used as a reliable element of progress in various branches of anthropology. Among the special labors founded upon its recent discoveries, none had been more conspicuous than those of Jacob Rodrigues Pereire, who taught congenital deaf mutes to speak; communicating to them, not only a natural voice and a correct pronunciation, but even his *accent gascon*, or peculiar southern emphasis. So says every one who followed his admirable teachings, Buffon, Lecat, Bezout, Diderot, etc. So can we say ourselves, with many living witnesses, Charton, Carnot, Leroux, etc., who have seen and heard in 1831, in the *salons* of the *rue Monsigny*, Mlle. Marois, the last surviving pupil of Pereire, when she came

from Orleans to visit the then unknown grandsons of her beloved teacher. Yes, we heard, decrepit, that voice which Buffon heard in its silvery tones of youth. Unfortunately we were too young and ignorant to pay due attention to this wonder; and our reminiscences of it are bare of the particulars which could make them valuable.

In this teaching, Pereire entered into communication with his pupils, by the use of, first, the manual alphabet engraved in the curious Spanish book of Juan Pablo Bonnet, "*Reduccion de las Letras, y arte para enseñar á hablar los mudos. Madrid: 1620.*" Second, of another syllabic manual of forty-odd signs of his own invention. Third, the natural resources of expression offered by pantomime. As soon as Pereire was understood by his pupils with the help of these temporary means of communication, he commenced to teach them to speak the speech proper, derived from the consciousness of the reciprocal nature of language. This consciousness could only be given to the deaf by a physiological discovery. Pereire analyzed the speech into two elements: the sound, and the vibration which produces it; the first which the ear alone can appreciate, the second that any flesh vibrating itself may be taught to perceive. He conceived that ordinary men hear the sound, without, most of the time, noticing the vibrations; but that the deaf, who cannot hear the sound, may nevertheless be made the recipients of vibrations. Hence, a given vibration producing only a given sound, the deaf taught to perceive the vibration, could not imitate it without reproducing likewise the corresponding sound of language. It is thus that he practically made his pupils hear through the skin, and

utter exactly what they so heard. By this discovery Pereire demonstrated to the physiologists of his day, that all the senses are modifications of the tact, all touch of some sort.

Buffon, taken by surprise at the sight of the deaf-speaking pupils of Pereire, and though knowing only a part of their mode of education, confesses to the novelty of the discovery in these terms: "Nothing could show more conclusively how much the senses are alike at the bottom, and to what point they may supply one another."—*Natural History of Man. 1st volume, first edition.*

The deaf mutes did not gain by this discovery, because their succeeding teachers could not even understand what it meant.

But important conclusions resulted from these experiments.

1st. That the senses, and each one in particular, can be submitted to physiological training by which their primordial capability may be indefinitely intellectualized.

2d. That one sense may be substituted for another as a means of comprehension and of intellectual culture.

3d. That the physiological exercise of a sense corroborates the action, as well as verifies the acquisitions of another.

4th. That our most abstract ideas are comparisons and generalizations by the mind of what we have perceived through our senses.

5th. That educating the modes of perception is to prepare pabulum for the mind proper.

6th. That sensations are intellectual functions performed

through external apparatus as much as reasoning, imagination, etc., through more internal organs.

When Pereire was implicitly solving all these problems by his demonstration on the deaf mutes of the identity of all our senses, he was in communication with Jean Jacques Rousseau, both living near each other in the *Rue de la Platrière*, which has since received the name of one of them. Pereire had his school of ten to fifteen deaf mutes there, and Rousseau was in the habit of coming in, in a friendly, neighborly manner. It would be presumptuous to suppose what transpired between these two men, so much unlike their cotemporaries. Rousseau so shy, but so extremely eccentric; Pereire so modest, but so intensely individual; both sincere monotheists in an atmosphere of incredulity; both intent upon their favorite subject, civilization in its surest form, education. But, in looking closely at their literary relics, we may more easily find ideas of Pereire in the "*Discours sur l'Inégalité des Conditions*," than ideas of Jean Jacques in the memoirs on the restoration of the speech to congenital deaf mutes, inserted in the collection of the French Academy. However, no one can doubt the reciprocal influence two such master spirits must have exercised upon each other. The book of *Emile* is full of experiments upon physiological teaching which could only have originated in the school for deaf mutes; so identical are the theories of the book with the practice of Pereire. Nevertheless, the first school where deaf mutes were taught to speak naturally, and the first treatise on education whose object was to create, not a subject, but a man, stand side by side as the two indices on the road of modern

education. In saying this we do not pretend to ignore other subsequent labors, such as the writings of Jean Paul Richter, and the school of Pestalozzi, whose originality is all from the *Emile*, and whose defects are mostly inherent.

When the first philosophical programme of Itard had partly succeeded against what was savage in his pupil, he conceived after Pereire and Rousseau, the physiological terms of his second one, which adapted themselves exactly to the functional incapacities of the idiocy of his pupil, so admirably described by Pinel; so that, *volens volens*, the great teacher began to treat the idiot in the savage.

With what success? Dacier, the Perpetual Secretary of the French Academy, summing up the opinion of that scientific body on this subject, wrote officially in 1806 as follows: "This class of the Academy acknowledges that it was impossible for the institutor to put in his lessons, exercises, and experiments more intelligence, sagacity, patience, courage; and that if he has not obtained a greater success, it must be attributed, not to any lack of zeal or talent, but to the imperfection of the organs of the subject upon which he worked. The Academy, moreover, cannot see without astonishment how he could succeed as far as he did; and thinks that to be just towards M. Itard, and to appreciate the real worth of his labors, the pupil ought to be compared only with himself; we should remember what he was when placed in the hands of this physician, see what he is now; and more, consider the distance separating his starting-point from that which he has reached; and by how many new and ingenious modes of teaching this lapse has been filled. The pamphlet of M.

Itard contains also the exposition of a series of extremely singular and interesting phenomena of fine and judicious observations; and presents a combination of highly instructive processes, capable of furnishing science with new data, the knowledge of which can but be extremely useful to all persons engaged in the teaching of youth." It is curious to see that Itard himself did not measure as justly as Dacier the compass of his physiological teaching, when he speaks thus on the same subject: "Leaving out the end aimed at in my self-imposed task, the education of the Savage of the Aveyron; considering this undertaking from a more general point of view, you cannot fail to see with some satisfaction, in the various experiments I instituted, in the numerous observations I made, a collection of facts capable of enlightening the history of medical philosophy, the study of uncivilized man, and the direction of certain kinds of private education."*

In the practice of physiological teaching Itard never went farther. He had undertaken the education of the Savage of the Aveyron, because he did not believe him idiotic; whilst Pinel warned him not to undertake it, on the ground of a contrary diagnosis: both thus giving their sanction to the doctrine of letting idiocy alone. When he first suspected that his savage might also be an idiot, his belief in the incurability of idiocy made him exclaim: "Unfortunate! Since my pains are lost and my efforts fruitless, take yourself back to your forests and primitive tastes; or if your new wants make you dependent on society, suffer the penalty of being useless, and go to Bicêtre, there

* Itard; Rapport, etc. 1807. P. 12.

to die in wretchedness."* He, of himself, never educated any other idiot, but directed "certain kinds of private education," which applied to a large range of cases, from idiotic to morally depraved; our common pupil was from among the former. Confined to these accidental and isolated instances, Itard never so much as hinted at the possibility of systematizing his views for the treatment of idiots at large, nor at organizing schools for the same purpose.

But he was the first to educate an idiot with a philosophical object and by physiological means. If he did not conceive a philosophical method of education, he expressed and realized the first views on this subject; generalizing on his savage idiot the sensorial experiments made by Pereire on the touch of deaf mutes; and specializing on the same forlorn pupil the theories enunciated by Rousseau for the education of mankind. In this double process consists the completeness of his labors; alternately analyzing and synthesizing, he followed his special aims without deviating from his general object. Others may have continued his task, even enlarged, completed, and systematized it, but we do not know of any one who would not gladly exchange all subsequent titles for the authorship of the two pamphlets on the "Savage of the Aveyron." Even at present, we quit with regret his few unrivalled pages, to follow the evolution of his idea through other minds, after his bodily death.

The idea of Itard came to its most comprehensive reali-

* Itard. *De L'Education d'un Homme Sauvage*. 1801. Pp. 45, 46.

zation under trying circumstances. The philosophical school to which he belonged in 1800, had gone to rest before him. In 1830-40 three schools were disputing the ruling of this century. The one called of Divine Rights, because it attributed a divine origin to the oppression of the many by the few, according to certain laws of heredity and priesthood; nothing between the parties but obedience and authority; education a limited privilege. The Eclectic school, whose highest aim was "classification according to capacity, and remuneration according to production;" perpetuation of classes if not of castes; education, like the rest, to the presumed capable; in fact, a liberal school classifying from the embryo, unequalizing from the foetus. The Christian school (St. Simonism), striving for a social application of the principles of the gospel; for the most rapid elevation of the lowest and poorest by all means and institutions; mostly by free education. The idea of Itard being congenial only to this last school, was nursed in it; in it experienced its natural growth and transformation; becoming from individual, social; from proportionate to the relief of special cases, commensurate with the wants of many idiots; and from adapted to this class of sufferers, competent to do the training of mankind. It is an undeniable fact that that school, and nobody out of it, has produced, among many works of eminence, the only didactic treatises on idiocy, and the last of these closed in the following words:

"If it were possible that in endeavoring to solve the simple question of the education of idiots, we had found terms precise enough, that it were only necessary to generalize them to obtain a formula applicable to universal edu-

education; then, not only would we in our humble sphere have rendered some little service, but we would besides have prepared the elements for a method of physiological education for mankind. Nothing would remain but to write it."

These lines stand, an unheeded appeal to write a work on physiological education. Teachers have plucked here and there some fragments of the training of idiots, as object lessons, imitation exercises, parcels of sensorial gymnastics, etc. Herbert Spencer has insisted upon a large application of the same to ordinary schools and children; but no *ex professo* book has been written; so that the last page of the treatise of 1846 may appropriately be the first one of that of 1866. This apparent dead-lock in the march of the idea finds its explanation in the fact that the school which developed the idea of physiological training was vanquished. When the power of the method was demonstrated by its success in the treatment of idiots, and when the sanction given it by the French Institute seemed to point to its early application to popular teaching, it became evident that circumstances were unfavorable. For it is not enough for an idea to be ripe in the mind of a thinker, and that it be hailed by the advocates of progress; the social medium in which it falls must be prepared for it as well; otherwise no production ensues from their contact. But generally the ground rejects the seeds which it cannot germinate, and they are carried, by what seems the fancy of the storms, to a more genial soil.

Germany, prepared by the labors of Comenius, Spiner, Francke, and nursed with the ideas of Rousseau by Base-

dow and Pestalozzi, had spread and enforced popular education from Switzerland to Denmark. England was only second to Germany in the same movement* which here received a particular impulse from the character of the American people, and of the institutions of the country. As early as 1635 and 1639, laws for the formation of free schools had been enacted in the colonies of New England. Later, when the fathers of this Republic wished to perpetuate the spirit of independence and the capacity of self-government, they voted lands and money for the foundation of schools for all children of whatever sex or color. So that in every new township the opening of the school-house preceded that of any other public building, even of the post-office. The immediate results of this policy appear in the universal elementary instruction of the natives; in the eagerness for learning of the pupils of both sexes; and in the high character of the teachers, most of them women.

With such competition from nearly all quarters, it would be difficult to tell wherefrom will rise the next improvement in education. If we believe in the signs nearest to us, we should think that, supposing the American teachers only equal in point of learning to their European brethren, they have shown themselves so superior in point of understanding of philosophical questions, and of devotion to the down-trodden of our race (when hundreds of them have

* More details might be given concerning the history and development of education in Europe, were it not that the whole matter has been ably and succinctly treated in the "History of Education. New York: 1860," to which we refer, by a talented writer under the *nom de plume* of Philobiblius.

spontaneously left home and comfort, and foregone the protection of civilization to teach freedom to freedmen), that it is impossible to deny them the virtues necessary to carry into our schools the means of a signal improvement in our race; unless we are greatly mistaken our teachers are ready to spread civilization, not by the old process of overculture of a few, but by the philosophical elevation of the masses. We do not need to tell them, headed by Barnard, Holmes, May, Mrs. Stowe, etc., and by the spirit of Horace Mann, in what the coming progress will consist. Descartes pointed it out in these memorable words, "If it be possible to perfect mankind, the means of doing it will be found in the medical sciences." Pariset* said, more explicitly, "The physiological method of education is an example worthy of imitation, of the alliance of hygiene, medical science, and moral philosophy." And the curriculum proposed by Spencer comes nearer to this object than any previous one. A deferential reference to his work on education will allow us to dispense with discussing the matter of the teaching proper, and leave more room for the exposition of the general principles of the method.

According to this method education is the *ensemble* of the means of developing harmoniously and effectively the moral, intellectual, and physical capacities, as functions, in man and mankind.

To be physiological, education must at first follow the

* Rapport de MM. Serres, Flourens, et Pariset, à l'Académie des Sciences. Paris: 1843.

great natural law of action and repose, which is life itself. To adapt this law to the whole training, each function in its turn is called to activity and to rest; the activity of one favoring the repose of the other; the improvement of one reacting upon the improvement of all others; contrast being not only an instrument of relaxation, but of comprehension also.

But before entering farther into the generalities of the training, the individuality of the children is to be secured: for respect of individuality is the first test of the fitness of a teacher. At first sight all children look much alike; at the second their countless differences appear like insurmountable obstacles; but better viewed, these differences resolve themselves into groups easily understood, and not unmanageable. We find congenital or acquired anomalies of function which need to be suppressed, or to be given a better employment; deficiencies to be supplied; feebleness to be strengthened; peculiarities to be watched; eccentricities to be guarded against; propensities needing a genial object; mental aptness, or organic fitness requiring specific openings. This much, at least, and more if possible, will secure the sanctity of true originality against the violent sameness of that most considerable part of education, the general training.

The general training embraces the muscular, imitative, nervous, and reflective functions, susceptible of being called into play at any moment. All that pertains to movement, as locomotion and special motions; prehension, manipulation, and palpation, by dint of strength, or exquisite delicacy; imitation and communication from mind to mind,

through languages, signs, and symbols; all that is to be treated thoroughly. Then, from imitation is derived drawing; from drawing, writing; from writing, reading; which implies the most extended use of the voice in speaking, music, etc. The senses are trained, not only each one to be perfect in itself; but, as to a certain extent other organs may be made receivers of food in lieu of the stomach and one emunctory may take the place of another, likewise the senses must be educated, so that if the use of any one be lost, another may feel and perceive for it. The same provision is to be made for the use of both sides of the body; the left being made competent to do anything for the right. But, instead of this, the present use of our senses is nearly empirical. No mechanic sees well enough at first sight all the parts of an engine; no draughtsman draws his pencil exactly where he means to; no painter can create the shades he has before him; no physician whose tact is perfect enough for the requirements of his profession: the imperfection of our sensorial and motive education always betrays, instead of executing the dictates of our will. Let our natural senses be developed as far as possible, and we are not near the limits of their capacity. Then the instruments of artificial senses are to be brought in requisition; the handling of the compass, the prism, the most philosophical of them, the microscope and others must be made familiar to all children, who shall learn how to see nature through itself, instead of through twenty-six letters of the alphabet; and shall cease to learn by rote, by trust, by faith, instead of by knowing.

True knowledge comes only in this wise. When a

sense meets with a phenomenon; the mind awakened to the reality of the latter by its elements, which mark its analogy to and difference from other phenomena, the mind receives from said analogy and difference the impression which constitutes the image to be stored, evoked, compared, combined, etc. The character of the analogies and differences presented to the mind by circumstances, and mostly by education, forms our stock of ideas; thus the same piece of muscle looked at by the butcher-boy or by the microscopist awakens images entirely different, and ideas whose associations shall differ more and more at each new combination. The comparison of simple ideas produces compound ones: ideal creations of the mind, whose existence is purely relative to that mind or to its congeners. The assemblage in the same field of comparison of a great number of ideas, primary or compound, gives rise to general ideas, as those of order, classification, configuration, etc. Ideas in their generality are abstract creations of the mind only commensurate with Immensity. As examples of generalizations may be mentioned, the progress of the knowledge of the surface of the earth, as leading to the generalization of its curves into the idea of its Globular shape: idea which sent Columbus in search of the antipodes; the idea of the quasi-infinite divisibility of matter which produced the Atomic theory; the presence of bodies everywhere, which gives plausibility to the hypothesis of Space; the suffering of the toiling masses which elevated the mind to the conception of Equality; the general harmony of the universe which dispelled the successive mythologies founded upon temporary antagonism of

elements, and made room for the idea of the Unity of our nature. Thus correct sensations being the ground of correct images, images being stored as simple ideas, the contact of which produces comparisons whose abundance leads to generalizations; till the mind embraces knowingly and willingly from the simplest image to the most synthetic idea.

In previous periods the total absence of general education for the masses, and of systematic training for the perceptive, inductive, and deductive faculties in each individual, made progress a spasmodic affair, quite properly attributed to blind fate; whereas, in the future, progress resulting from the equal education of all women and men, and from the direct training of all their functions, shall appear to every mind as it really is, issuing from an intelligent and understood Providence, which leads us through a continuous series of improvements towards our religious destiny.

At this point physiological education merges into the moral training. This we cannot even sketch without going beyond the object of this introduction, which was two-fold.

1st. To trace the origin of the methodical treatment of idiots and their congeners.

2d. To present the philosophical history of the idea of training the functions, and all the faculties as functions (instead of only instructing children); from its germination to its maturation in the school for idiots, and to its actual fitness for the training of all children.

PART I.—IDIOCY.

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Synonyms.—Named by Savage, *Amentia*; by Segar, *Imbecillitas ingenii*; by Vogel, *Fatuitas ingenii*; by Linnæus, *Morosis*; by Cullen and Fodéré, *Demence innée*; by Willis, *Stupiditas*; by Pinel, *Idiotism*; by some English writers, *Idiotcy*; by Esquirol and the majority of Encyclopædias and Dictionaries, *Idiotcy*.

We shall use this latter term to express the physiological infirmity; and would like to see the name given to it by Pinel, *Idiotism*, preserved to express the specific condition of mind pertaining to idiocy.

Its definitions have been so numerous, they are so different one from the other, and they have so little bearing on the treatment, that their omission cannot be much felt in a practical treatise. Our own, if objectionable, will be found at least to correspond to a plan of treatment, both supporting each other; and may suffice until a better definition and a better treatment can be devised.

Idiotcy is a specific infirmity of the cranio-spinal axis, produced by deficiency of nutrition in utero and in neo-nati. It incapacitates, mostly the functions which give rise to the reflex, instinctive, and conscious phenomena of life; consequently, the idiot moves, feels, understands, wills, but imperfectly; does nothing, thinks of nothing, cares for nothing (extreme cases), he is a minor legally irresponsible;

isolated, without associations; a soul shut up in imperfect organs, an innocent.

The *modus operandi* of deficiency of nutrition in the first period of life has not yet been fully investigated; it may bear upon all the tissues, but we are concerned here mostly with its action on the nervous system.

At the time when deficiency of nutrition takes place it stops the foetal progress, and gives permanency to the transitory type through which the foetus was passing; these transient types being to some extent analogous to the persistent forms of the lower animals. For instance, *atresia palpebrarum* testifies to the presence of the cause of arrest of development as far back as the third month of gestation; arrest of development of the inter-auricular septum leaves the human heart homologous with the heart of fishes; similar early arrest of nutrition of the encephalon leaves its circumvolutions unfinished at the low types of the orang-outang, the calf, or even lower. After the time at which deficiency of nutrition has stopped the ascending evolutions of the embryo at one of its low types, it sometimes continues its deleterious action of altering, or entirely destroying the foetus also. For instance, it may destroy one of two foetuses for the nutrition of the other, leaving next to the spared one an acephalus, or only a few fragments of an organized being; or it may partially destroy an encephalon at any stage of development, even after birth, by the intervening of hydrocephalus; or it may give rise to some embryonic malady, destructive of a set of organs or of functions. Though deficiency of nutrition may affect the whole being, it strikes by preference one set of organs,

such as those of speech, of hearing, of local contractility. Deficiency of nutrition happens in two ways; slowly, when induced by depressing influences; or at once, when brought on by a shock. Hence, the first leaves the child a prey to maladies of embryonic origin, or at best at a low point of vitality; the other leaves him well provided for by anterior nutrition, but torpid, or a prey to automatism, epilepsy, etc.

It is true that we ignore most of the influences which produce deficiency of nutrition in utero, but the fact itself cannot be denied. Impressions will sometimes reach the foetus in its recess, cut off its legs or arms, or inflict large flesh-wounds before birth: inexplicable as well as indisputable facts, from which we surmise that idiocy holds unknown though certain relations to maternal impressions as modifiers of placental nutrition. Farther, ignorance stops us. On the threshold of the investigation, instead of knowing all the causes of deficiency of nutrition, we are delayed by the necessity of studying the circumstances in which it appears, and so often produces idiocy.

The circumstances which favor the production of idiocy are endemic, hereditary, parental, or accidental. Idiocy is endemic only as connected with some forms of cretinism. It is considered hereditary where there have been cases of idiocy or of insanity in the preceding or collateral generations. It is called parental when referred to certain conditions of the father or mother. The direct influence of the former ceases after conception, the intimacy of the latter with her fruit is incessant during the eventful periods of gestation and lactation; hence the share of the mother in

the circumstances favoring the production of idiocy is the larger. She may have been under-fed in poverty herself, or through previous generations; or so miserably enervated by music, perfumes, savors, pictures, books, theatres, associations, that a precocious loveliness has outgrown her motherly capabilities, as *forcing* converts the pistils and stamens of flowers into beautiful fruitless petals.

She, being pregnant, has used for exclusive food unnutritious substances, such as pickles, dainties, lemons, tea, brandies, etc.; or vomited all real food soon after ingestion.

She has conceived at a time when spermatozoa have encountered noxious fluids of venereal or menstrual origin, or have been altered in their vitality previous to their emission by drunkenness, etc. She is often passive under the causes of impressions, depressions, shocks, privations, exertions, abuses, excesses, altering the nutrition of the unborn or new-born child.

But all these circumstances do not seem to act with the same energy or frequency in the production of idiocy, which is attributed most of the time, by women worthy of being trusted, to sudden or protracted impressions of an accidental or moral nature. The same testimony appears to extend the power of these circumstances through the period of lactation, in which mothers, morally affected, have seen symptoms precursor of idiocy, such as convulsions, follow immediately the ingestion of milk, and idiocy, paralysis, epilepsy, or death supervene.

Accidental idiocy, after birth, is caused by unnutritious diet, want of insolation and of other hygienic requisites; by

hydrocephalus, measles, whooping-cough, intermittent fever, etc.

In the above circumstances, as far as we have learned, must we look for the origin of idiocy and its annexes. But everything pertaining to conception, gestation, parturition, lactation, remains enshrouded behind the veil of Isis. If women would only speak, we should be able to call upon them in the name of science, a social protection they do not seem to need, nor care for in their present mutism ; and we should soon be enabled to generalize from their individual experience frankly told, the laws of anomalous creation in our race. Since idiocy is ascribed to so many circumstances, taking place at such different periods of the formation of the child, it is not to be expected that it should assume an identical appearance ; in fact, on entering a school, the idea of similarity is soon dispelled by the heterogeneous features of the inmates ; therefore the same drawing cannot represent them but as a type, after a practical study of the varieties. These varieties are simple and complicated idiocy.

To clear the field we begin with the last named.

Endemic idiocy is interwoven with alpine or lowland cretinism and bronchocele, producing at birth the cretin-idiot, in youth the cretin-imbecile, and after puberty the cretin (simplex), able to procreate his like. Thus cretinism, besides its apparent geological connexion or origin, is hereditary, like scrofula ; a taint in the blood, preparing children for idiocy or imbecility, according to the age of its invasion. This alpine cretinism is due to locality and to intermarriage, and it is never isolated ; it affects the skin with a bistre or maroon color. Its action does not cease

after having produced idiocy, for if its victim be put in a locality where cretinism will aggravate, idiocy will do the same; and if placed in circumstances of climate, of hygiene, of exercise, where cretinism may improve, idiocy will also improve, and shall become more amenable to the physiological treatment, as the labors and devotion of Guggenbühl have abundantly proved. The low-land cretinism of Belgium, of Virginia, etc., with its discrete goître, its grey and dirty straw-colored skin, bears the same relation to idiocy and imbecility as the more extensive alpine variety.

So does the furfureous cretinism, with its milk-white, rosy, and peeling skin; with its shortcomings of all the integuments, which give an unfinished aspect to the truncated fingers and nose; with its cracked lips and tongue; with its red, ectropic conjunctiva, coming out to supply the curtailed skin at the margin of the lids.

Let us here remark that bronchocele may exist with or without cretinism, or cretinism with or without bronchocele; but that cretinism cannot be found without being allied to one of the three alterations of the integuments above described.

These alterations are not observable in the following forms of complicated idiocy:

Infantile convulsions may produce idiocy; epileptic seizures strike with idiocy in the first age, with imbecility in the second, later with dementia. Idiocy receives a deleterious influence from epilepsy; attacks of which sometimes obliterate the faculties gradually and steadily; at other times they carry away at one sweep all mental acquirements for a time, or permanently.

Chorea acts in like manner, less suddenly but with more steadiness, by the incessant shaking of the whole frame, through the nervous "dance." That is the way in which it gives unsteadiness to every movement, to every impression, to every expression, keeping the subject in a state of tremulousness, unfit to be the starting-point of physical and intellectual operations, and of forming or transmitting correctly the orders of the will. Hence the difficulty of improving idiocy before curing chorea; and if we do not succeed in this, shattered nerves, a tendency to tetanic horrors, epilepsy and paralysis may be expected.

Extensive paralysis or contractures, particularly when affecting the upper limbs, act by depriving the child of important means of communication and of knowledge, producing the symptoms of superficial and aggravating those of profound idiocy, where this latter co-exists with these accessory infirmities.

Deafness and blindness from birth have the same effects as paralysis on ungifted children, by depriving them of the cognizance of a whole series of phenomena. But it is a fact curious enough to be noted, that partial obliteration of one of these channels of knowledge will produce the symptoms of superficial idiocy surer than its complete destruction. One must not forget that those two infirmities, cecity and deafness from birth, leave in the best educated an idiosyncrasy dreaded in the workshops where the deaf or blind might otherwise compete with other mechanics.

We note as important that idiocy is more frequently met with epilepsy and chorea, less with paralysis and contractures, least of all with deafness and blindness;

and that its decreasing severity is quite in the same ratio.

We come now to unmixed or simple idiocy.

Idiocy without complication presents itself under various aspects; and we have shown that it could not be otherwise, since some of the circumstances already known as favoring its production are themselves so varied. This diversity of character will be fully exposed in the following division of idiocy, in the analysis of its symptoms, and in subsequent observations.

Idiocy is called profound when the ganglia are altered, and superficial when the peripheral termini of contractility and sensation only seem to be affected. It is called organic when the organs are sensibly altered, and functional when our imperfect instruments and observation do not permit us to trace the organic lesion as we do the functional disorder. It is called sthenic when it gives the child nervous impulses without object; and asthenic when it leaves him without them, when they are wanted for some object. Though we are ready to acknowledge these last apparently contradictory symptoms as simple manifestations of the same low type of vitality, produced by difference of circumstances, nevertheless, these symptoms give too precious an indication of the different treatment required for each, to be omitted; since the division founded upon them has a practical, if not a truly scientific import. Other divisions might be devised, but as they bear on the psychological symptoms exclusively, and repose more on degrees than on differences, they are more apt to disclose the ingenuity of their framers than to prove new and beneficial.

In regard to the pathology of our subject, we will divide it into organic and physiological.

Organic pathology relates to shape, size, proportions and other characteristics observable on the living; and to alterations of internal structures which diagnosis may suspect, but anatomy alone can disclose.

The pathological symptoms of idiocy have, unfortunately, been described only by men who never knew or never taught anything about the subjects of their post-mortems; so that we have descriptions, masterly or not, of organic anomalies, without a word of their corresponding psycho-physiological symptoms. Such a thing could not be done for any other pathological condition than idiocy, without meeting with the most merited censure. If we, personally, deserve the contrary disapprobation for having studied the physiology of idiocy more than its pathology, the exceptional difficulties we encountered, and the novelty of the undertaking are our excuses.

Though idiocy does not stamp children with any particular shape of the body, still, be it the effect of unequal nutrition, of want of normal activity, of will in the gathering up of the limbs to the body to form the various attitudes, the great majority of idiots seem to be not so much ill-shaped as ill-proportioned; the exceptions of splendid build covered with rich integuments, belong particularly to cases in which may be detected a tendency to insanity, or some complication, such as paralysis of the organs of speech.

When the central nervous apparatus is affected in idiocy, the following alterations may be noticed. The substance

of the brain is softer generally, or partially harder, and as it were shrivelled. The color is paler, with less distinction between the white and grey matters. The circumvolutions are neither so numerous nor so well defined on the surface, nor so deeply penetrating. The hemispheres do not expand above the sensory ganglia and cerebellum with their normal amplitude. The lateral and posterior lobes being particularly short of their normal expansions; the cerebellum which is not fully covered by the hemispheres being larger in proportion.

If the cranium were always and everywhere of the same thickness, and if the brain were always filling the whole of its cavity, the external configuration of the skull might be taken as the counterpart of the form of the brain, and used as the relative measure of its bulk. But the reverse is true. Crania are very thick or very thin, partly thick and partly thin, particularly so at the frontal sinus, the tables of which are often besides vastly apart. Moreover, the brain is very far from always adapting itself with the same exactness in reality as in theory to the form of the cranium. In fact there are cases in which the brain presses so strongly against the cranium, that either the internal table is eroded by the convolutions and bears a deep imprint of them, or other cases in which the compression exercised by the unyielding cranium is such as to deface all convolutions and enfractuositities of the hypertrophied mass; cases in which the distension of the cranium is due to the presence of a tumor, of hydrocephalus, or of hypertrophy; anomalies as difficult to discriminate on the living subject as the thickened tables of the skull.

If we pass from the sizes of large skulls, which are attributed to hydrocephalic origin, to those which present microcephalic proportions, we shall see that we cannot judge by them more accurately of the condition of the brain. Sometimes a very small skull encloses quite a bulky and healthy encephalon; sometimes the skull will not be so very small, only irregular, and disclose internal anomalies, such as the following found by Lebert.* “Cerebrum very small, right hemisphere larger and ‘*bombé*,’ left smaller and flattened; circumvolutions narrow, more so posteriorly, where they are of the size of ground worms; they are twisted, and in their course are puffed up and constricted alternatively.” In other cases, the hemispheres may be found almost without convolutions, and the medullary substance covered only with a thin layer of cineritious matter. Or, in the absence of the corpus callosum, the hemispheres were found to communicate only through the medium of the anterior and posterior commissures. Or, the pineal and pituitary bodies were much atrophied. These anomalies and many more are recorded from the autopsies of microcephalic idiots, but as usual without a word as to their corresponding psycho-physiological disabilities.

To sum up what we have said about size by two extreme cases, we are acquainted with a lady, fifty years of age, whose head measures twenty-seven inches in circumference, and above twenty-two from one external auditory foramen to the other across the vertex, who could, in younger days,

* *Traité d'Anatomie Pathologique*. Vol. I., p. 84. Pl. IX., fig. 1 and 2.

perform the duties of a Sunday-school teacher, and even now behaves like a lady in every respect. And we have seen enough of the Aztec children, so well observed by Dr. John C. Dalton, whose heads are under thirteen inches in circumference, to be sure that, previous to their training as show-things, they could have been educated like human beings, and improved as much as extreme microcephalic children have been by Drs. S. Howe and H. B. Wilbur (see Observations in Appendix). To close what we have to say about the size of the heads of idiots; it is most of the time quite normal, though it looks too big in infancy, because it stands on a sickly frame, and too small later, because the body has grown and the head has not, owing to the deficiency of special nutrition and to deprivation of intellectual gymnastics. Lastly, the two tables of crania, large or small, not being exactly parallel, and being sometimes very far apart, the internal capacity of the skull cannot be founded upon its external measurements. Hence, observers have tried to obviate this difficulty, at least on the dead, by measuring the internal capacity with instruments, liquids, sand, or seeds; but these new means could no more be invoked as tests of idiocy than the measure of the external size; since that cavity was not on the living necessarily filled up with medullary and cortical substance; and since savages are endowed with the full capacity allotted to their race, who have heads whose size is inferior to that of the idiots of ours.

If we pass from the consideration of the external size and internal capacity to that of shape, we see, equally, all

sorts of forms among the heads of idiots. The shape of the head may be altered from its primitive type in each race by disease or by art. Idiocy presents mostly the following deformities: Heads flattened anteriorly or posteriorly, or circularly compressed to a cone, which tends upward or backward; flattened at the sides, or at the top; very low or very high, as if crowned by a stony table, or bilobed by a depression running along the coronal suture; or with both parietal eminences greatly exaggerated; or the vertex expanded like a balloon, whose neck would be represented by the compressed forehead and lower lateral bones, reposing on a diminutive face. These deformities are the principal, but many idiots do not present any of them, whilst they are found among people who practice them, not to incapacitate their children, but to make their heads correspond to some desired type by a sort of plastic orthophreny. We notice, besides, two kinds of disproportion in the component parts of the cranium. One from side to side, which, very rarely extreme, is seen accidentally in idiots and insanes; but which, in its milder forms, may be detected on, we may say, any cranium; even the circumvolutions presenting commonly, from side to side, disproportions and differences: consequently the disproportion from side to side of the head is not a test of idiocy.

The other disproportion affects the relative development of the three segments forming the vault of the cranium; we will consider them in their relative expansion, and in their mode of uniting to form a cavity. The posterior segment contains the cerebellum, and so much of the hemispheres as expands over it in proportion to natural or

acquired development; the second contains the primitive cerebrum, the tubercula quadrigemina, and other ganglia; the third contains the largest accretions made to the human brain, according to race and education, in such a bulk as to atrophy the olfactory lobes, to depress the orbital cavities, and to raise the vault of the frontal bone very sensibly since the short period of two thousand years, as appears by all the monuments of our race. The harmonious development of these three parts, according to the standard for each race, represents the harmony of manly functions; and when it exists in large encephalic masses, insures great mental power.

Considering the modes of formation of the sutures by which the bones are united; the suture may be formed too hastily, when there is atrophy of the brain, and are smooth and cannot be felt; or under the influence of a serous inflammation, and then their serrated structure is felt rough and elevated by the finger through the thin integuments. But when circumstances have prevented or retarded the formation of the sutures, palpation detects the opened or imperfectly closed fontanelles, the presence of wormian bones in anormal numbers, or the loose condition of the coronal, sagittal, and lamdoid sutures.

In the relative development of the segments, and in their modes of suture to form the cranium, resides the harmony or disharmony which strikes more than size or shape in human heads. Reserving the exceptions, any deviation from the Caucasian type among our children, in respect to harmony of proportions, must be looked upon, *a priori*, as representing some anomaly in their faculties; and any im-

perfection in the mode of union of the segments of the skull cannot fail to enlighten the etiology and pathology of our subject.

Nothing hinders us now from entering into the study of the physiological symptoms after having taken a rapid survey of the infant born idiotic, or predisposed to idiocy.

The only thing which could tempt us to form a diagnosis when the child is just born, is the often monstrous shape exhibited by the head. But it is so difficult to appreciate what part of it is due to deficiency of nutrition or to transitory compressions from manœuvres or instruments; and the head is endowed with such a power of reaction and self-modulation against these transient deformities, that we had better let it receive its own finishing touch before venturing on the expression of a judgment upon its unfinished state. But after the first cries, the child shuts himself up into a chrysalid life. He is rosy and rather puffy, or greyish and shrivelled in his loose integuments, according to his general health. For a time nothing more of him may be foreseen than is seen. Even a few months later, if the mother, feeling her baby without reaction in her embrace, seized with a secret presentiment, seeks for advice, the physician rarely happens to see him otherwise than nursing and sleeping. He has scarcely the chance to notice the head hanging back, or rolled on the pillow automatically; the eyes unlighted and playing the pendulum in their sockets, fixed, or upward or sideways; the difficulty of swallowing the milk once drawn in the mouth; the absence of voice or its animal sounds; the inability of

the spine to support the body; the flaccidity of the legs; the hands closed, thumbs inward, by the side instead of coming out from the cradle to take with a firm grasp their share of this world.

In the midst of this uncertainty, profuse salivation, involuntary excretions, imperfect sensations or disordered movements appear daily more settled, instead of the opposite abilities vainly expected. Or after a fall, a blow, exposure to cold, insolation, prolonged succussions, fright, or in the period of teething, coma sets in or convulsions appear. After which some function of the reflex or voluntary order, motor or sensitive, is impaired. But the commotion of the cerebro-spinal axis may be temporary or prolonged, producing more convulsions, deeper coma, other incapacitations; throwing the little sufferer far behind his fellows, or leaving him a confirmed idiot. Between these two extremes the majority of young idiots do not differ very sensibly from common babies; because the power of both may be expressed by the same verb, they cannot. But to-morrow the well infant will use his hands, the idiot will allow his to hang in half flexion; the first will move his head at will, the second will toss it about; the look of the former penetrates every day farther than the domain of the touch, that of the latter has no straight dart, and wanders from the inner to the outer canthus; the one will sit erect on his spine, the other shall remain recumbent where left; the first will laugh in your face with a contagious will, the second shall not be moved into an intellectual or social expression by any provocation whatever. And each day carves more deeply the differential charac-

ters of both; not by making the idiot worse, unless from bad habits gotten by neglect, but by the hourly progress of the other. Idiocy so viewed from its origin is a continuance of the isolation and helplessness of babyhood under ampler forms and obsolete proportions. Compared unavoidably with children of his age, the idiot seems to grow worse every day; his tardy improvement looking like backward steps. With his incapacity of action, of expression, of feeling, he makes a sickening sight indeed by the side of a bright child entering into the intricacies of life as on an open play-ground.

At this stage there can be no mistake; we see plainly what he is, and we can describe what we see. This is the time when the study of the physiological symptoms will make up for the deficiency of the anatomico-pathological ones.

The functions of organic life are generally below the normal standard. The respiration is not deep; the pulse is without resistance. The appetite is sometimes quite abnormal in its objects or limited to a few things, rarely voracious, though it looks so, owing to the unconventional or decidedly animal modes of eating and drinking of these children. The swallowing of the food without being masticated, only rolled up in saliva, resumes many of these imperfections which are to be attributed in variable proportions to absence of intelligence, want of action of the will on the organs of mastication and deglutition, deformity of and want of relation between the same. As might be expected, imperfect chewing produces on them, as on other children, unpleasant effects, but no more. Their excretions cannot

be said to present any dissimilarity from those of others which our senses can discriminate; only their sebaceous matters are as different from ours as ours are from those of the variously colored races, or from those emitted in most diseases.

The functions of animal life, or of relation, are generally affected in idiocy; either by perversion, diminution, or suppression. We shall begin the study of these anomalies in the organs whose contractility has for object the movements of displacement and prehension.

The incapacity of walking, and of prehending objects, to whatever degree it exists, gives the measure of the isolation of the idiot. He is isolated because he cannot go to the distant phenomena; he is isolated because he cannot possess himself of those which come in the range of his imperfect grasp; he is doubly immured in his muscular infirmity. The same motor function may exist, but escaping the control of the will, it produces movements more or less disordered, mechanical, spasmodic, or automatic. Disordered, when their want of harmony prevents the accomplishment of their object; mechanical, when their recurrence, in the course of other normal movements, cannot be otherwise produced or prevented, but can hardly be postponed by a superior influence; spasmodic, when they proceed from an accessory condition of the nerves congener to chorea or epilepsy; automatic, when they consist in the continuity or frequent recurrence of a single unavoidable gesture, without object or meaning. The simple disorder of movements involves a waste of nervous power, disabling, more or less, the child for useful activity, but not depriving

him of it entirely. The mechanism throws, unexpectedly, some instinctive jerk or motion in the midst of well-regulated actions. The spasmodism accompanies all actions, as in chorea, or substitutes itself at times for all the normal acts, as in epileptic seizures. The automatism acts as a substitute for all, or nearly all other modes of contractility; it incapacitates more and more the child's muscular power for any useful purposes; and, as a sorry compensation, furnishes him with a supply of involuntary instead of voluntary exercise. Of the four anormal ways of expending uselessly and unwillingly the contractile force allotted to the muscular system, automatism is the most tenacious, when, for years past, no physiological action has been induced by proper training in its stead.

Idiocy affects the body in its general habits, as bending forward, throwing the head backward, moving it in a rotatory manner which seems impossible, swinging the body to and fro, or in a sort of sideway roll.

Another anomaly of contractility is its difference in either side. Whatever wise provisions have been made to secure the unity of action of the two sides which look like two men living right and left under the same skin and name, as anastomoses everywhere, decussations in the medulla spinalis, medulla oblongata, and nerves of special sense; connection of both cerebrum and cerebellum, by the pons varolii, corpus callosum, and commissures; notwithstanding all these, one side of the body, of the limbs, of the nerves, and, some observers think, of the brain too, seems to take the lead. Who uses equally both hands? Who is sure that he does not think and express himself mostly

by the impulse of a single hemisphere? These apparent deviations from the pre-ordained human type strikes more in idiots, who are often more incapable, colder or weaker on one side without hemiplégiâ, who walk better and step higher with their left foot, who are oftener left-handed than ordinary children, and who write, if not corrected, from right to left, as the Bible was written.

Contrarily, idiots, but not the lowest, seek sometimes for the repetition on one side of impressions they have previously received on the other, even if these inflict pain. But common children are found doing the same, and very likely continue to do it until experience has taught them the more summary process of trusting to the experience of a single side-apparatus.

The swinging of the body in walking, or in the sitting posture, is characteristic of the disorders of contractility; besides, it is no doubt connected with some defect of the central nervous organs. We have seen similar uncertainty of gait in persons who have received a severe shock, or who labored under meningitis, who carried a large aneurism, or after having repeated pleurisies on one side; and we noticed the same swinging in a young soldier who had two bullets lodged in the left side of his chest. Besides, a set of special organs may be separately or collectively affected, as we have seen those of the movements of totality by want of synergy, which simulates paralysis; or by one of the anomalies of motion mentioned above. By inability of transmitting the orders of the will to any of the special organs, their functions are abolished or only altered in many modes which challenge a general description; and

by the disorders of mechanism, automatism, etc. Moreover, special functions may be variously disordered in so many ways, that sooner than writing a volume full of these anomalies, we shall refer for their description, if important, to some observations to be found at the end of this volume. Another reason for not describing them separately is, that they are ordinarily blended with those of special perception; and that some of them will, in consequence, be treated of, together with some nervous disorders, under the common head of anomalies of the senses.

As we just premised, several anomalies of movement in idiots are more or less allied to dullness, exaltation, or other perversions of the touch; and we have to mention a few of these complications before studying the isolated deviations of the sense itself. Dullness of tact incites some idiots to strike their fingers against the hardest bodies, with apparent pleasure and irresistible eagerness; others to throw their thin-boned foreheads against persons and things, making them rebound and resound as if suffering were pleasure, or both these feelings abolished. Contrarily, some children whose hand-tact is null, or hand-touch uneducated, substitute to them the head-tact and touch, actually tacting with the latter the things they desire or repulse; caressing with it the person they love. How could so different aberrations of a sense exist in idiots? But how is it that as soon as their hand is taught to touch, their forehead loses the power of touching and feeling?

The following are examples of another kind of hyperæsthesia:—Some of our children will be unable to touch anything, but with the delicacy of the humming-bird, and

seem to suffer greatly from any other mode of contact imposed upon the hands. The feet of others are so much affected with similar exaltation of sensibility, that the thinnest shoes pain them, and the contact of the softest carpet or floor makes them recoil or advance, as if they could not help it, and as if walking on live coals. The hands of one child will move with prestidigitative briskness without apparent object, single or interlaced, to intercept some rays of light falling obliquely into their vacant eyes. Other hands, affected with disorder of the touch, without obvious complication, are caressed, sucked, bitten, till the blood starts, or a heavy callus is formed to protect them; others are constantly bathed in saliva, and their skin nearly resembles that of the washer-woman: these hands feel, out of the mouth, like fish out of water. We could multiply these examples of anomalies of sensation, single or double, merely tactile or altogether tactile and contractile, by which the hand is robbed of its powers as an instrument of touch, as well as of prehension.

Setting aside these localized tactile disorders, general sensibility proper is dull in idiots, who are soon benumbed by cold and less affected by heat, but much prostrated by the atmospheric modifications of a thunder-storm.

With them the Taste and Smell are oftener indifferent than anormal. Rarely we see them have a taste for non-alimentary substances, or an exclusive appetite for one kind of food. Some of them, without swallowing, chew beads, suck pieces of broken china, etc., with apparent relish. The smell may take possession of the same articles and scent them for hours, or delight in the fragrance

of two pieces of silex, stricken one against the other ; or, this sense may substitute itself for any other, as a means of discrimination and knowledge ; or, on the contrary, be dead-like to all intent and appearance. But the difference between the errors of function of these two senses is, that the taste is oftener depraved, and the smell is more frequently exalted.

The Hearing is sometimes so passive and limited, and the intellectual wants so disinterested to the noises transmitted to the ear, that the idiot, though possessed of perfect organs of audition, is practically deaf, and, of course, mute ; no deafness, and yet no hearing. Therefore, it is prudent to remember that next to the deafness from birth, or from infantile diseases, there is an intellectual deafness from idiocy ; the only one which we shall specially consider. In this interesting condition the child may hear, and even audit the sound of objects that he knows and wishes for, and none other. For instance, he hears music, and no articulated voices ; or he may retain and repeat tunes, and not be able to hear or repeat a single word. He may even, in extreme cases, be absolutely indifferent, and, consequently, appear really insensible to sounds ; and then the diagnosis has to be postponed till the state of the organ and function is thoroughly ascertained by an experimental training of that sense. So far, he is practically deaf and mute, but is not so organically. This difficult point in diagnosis has caused many mistakes.

The Sight may be as badly and more ostentatiously impaired than the hearing. Be it fixed in one canthus, be it wandering and unfixable, be it glossy, laughing, like a

picture moving behind a motionless varnish, be it dull and immured to images, its meanings are not doubtful; it means idiocy. Our expressions here would be very incorrect if they conveyed the idea that these defects of vision prevent the child from seeing. The images being printed on their passing into the ocular chamber, as the river-side scenery is on the passing current, the child, when he pays an accidental attention, gets a notion of some of them, but the transitory perception produced thereby can hardly serve him for educational purposes. The principal characters of this infirmity are, the repugnance of the child to look and the incapacity of his will to control the organs of vision; he sees by chance, but never looks. These defects of the sight, when grave, are always connected with automatic motions, and both oppose serious obstacles to progress; one by the ease with which the child can use his negative will to prevent the training of his eyes, the other by depriving him of all knowledge to be acquired farther than the touch can reach. This complication makes a child look very unfavorably indeed, and increases much the task of his teacher.

Some idiots are deprived of speech, that is to say, do not pronounce a word. Some, speaking a few words more or less connected in sentences, have yet no language; for the word language conveys with it the meaning of interchange of ideas. In this acceptation, language does not belong to idiots before they are educated, nor to those who are but imperfectly so, and, consequently, they have a speech more or less limited, but no language: strictly speaking, speech represents the function, language the faculty.

When we come to examine the anomalies of the speech,

as here defined, it is well to exclude, previously, the many organic disorders which may interfere with it as a function, and which have nothing to do with idiocy, but as an external impediment and exogenous aggravation. For, because a child is idiotic, it does not necessarily follow that his organs of perceiving speech and of expressing language may not be impaired by some independent affection. Idiotic or intelligent, a child may be deprived of hearing, or of the movements necessary to form the speech, directly by malformation or paralysis, or indirectly by the many causes producing deafness. These are the causes of the organic mutism which must never be attributed to idiocy, but which too often aggravates it.

To substantiate in a few words the causes of the functional mutism derived from idiocy, we point out, first, the incapacity of the will to move the organs; second, the long silence in which idiots have confirmed their mutism, like prisoners have gotten theirs in protracted confinement; third, the absence of persevering and intelligent efforts of their friends to make them speak; fourth, the want of desire to exercise that function, and the want of understanding of the power of speech as a faculty.

In this wreck of powers, one human, irresistible tendency or impulse is left him; for as low as we find him, lower than the brute in regard to activity and intelligence, he has, as the great, the lowly, the privileged, the millions, his hobby or amulet that no animal has: the external thing toward which his human, centrifugal power gravitates; if it be only a broken piece of china, a thread, a rag, an unseizable ray of the sun, he shall spend his life in admir-

ing, kissing, catching, polishing, sucking it, according to what it may be. Till we take away that amulet, as Moses took it from his people, we must have something to substitute for it. This worship or occupation shows that if the idiot can form, of himself, no other connexion with the world, he is ready to do so if we only know how to help him.

That the idiot is endowed with a moral nature, no one who has had the happiness of ministering to him will deny. Epileptic, paralytic, choreic, or imbecile children will often strike or bite their mother or affectionate attendant. If any idiot is found doing the same (and we never found any) he must have been taught it by some cruel treatment imposed upon him. In general, as soon as his mind is opened to reflection, the tender family feelings are so deep in him that they often interfere with his successful transplantation into the broader and richer ground of our public institutions. It is true that his habits are sad, droll, or repulsive; that his doings are often worse than none; but these manifestations exhibit as much the carelessness and want of intelligence of the parents or keepers as they do the primary character of the infirmity. Does not the idiot, in making his silly gestures, tacitly say, "See what I am doing; if you knew how to teach me better and more I would do it." It is true, that previous to being educated, the slightest work is too much for him, and makes him recoil; but if we succeed in making him believe that he has accomplished a real object, emulation will appear and shed a ray of satisfaction over his face. He is sensible to eulogy, reproach, command, menace, even to imaginary

punishment; he sympathizes with the pains he can understand; he loves those who love him; he tries to please those who please him; his sense of duty and propriety is limited, but perfect in its kind; his egotism is moderate; his possessive and retentive propensities sufficient; his courage, if not Samsonian, is not aggressive, and may easily be cultivated. As a collective body, idiotic children are, in their institutions, equal in order and decency, in true lovingness, if not in loveliness, to any collection of children in the land. Their moral powers are influenced by isolation, company, multitude, silence, turmoil, music, human eloquence, as they are in all masses of mankind. If we are asked how we pretend to see all these good and promising dispositions in the unfortunate subject whom we have depicted as more or less motionless, speechless and repulsive, we can affirm that the idiot, even when neglected in his lowest conditions, does not manifest any character contrary to the one here described; a character which we have seen him assume, steadily and uniformly, under the influence of a proper training, and, as we firmly believe, in virtue of his own moral nature: he is one of us in mankind, but shut up in an imperfect envelope.

Therefore, we must not confound with imbeciles, insanes, epileptics, etc., the harmless idiot, sitting awkwardly, bashful, or at least reserved on our approach. He will answer us if he can, rarely mistaking, never deceiving, but oftentimes failing to understand. His mind is extremely limited but not deranged, and with no special tendency to final insanity. He has been hurt often, but he never assailed anybody; he loves quiet places and arrangements; repeated

monotonous sounds, or stillness, and above all plain and familiar faces; he has a look, not of envy at things and persons, but of abstraction, gazing far out of this world into a something which neither we nor he can discern.

How could any child, subject to other disease or infirmity, be mistaken for him? Nevertheless this confusion takes place. Practically and legally, the idiot has been assimilated to unfortunate beings whose rights upon society are different from his; and he has suffered deeply by the mistake.

The child nearest akin to an idiot is called simply backward, in French *enfant arriéré*; his character may be better delineated by comparison with the idiot, who presents even in superficial cases, an arrest of development, whilst the feeble-minded child is only retarded in his. The idiot has disordinate movements, cannot use his hands, swings his body in walking, presents some sensorial vices or incapacity; on the other hand, the backward child is free from any disordered activity, uses his hands naturally but with very little effectiveness, walks without defect, but without firmness or elasticity, presents no sensorial anomaly but does not much use his senses to quicken his sluggish comprehension; when the idiot does not seem to make any progress, and when the ordinary child improves in the ratio of ten, the backward child improves only in that of one, two, three, or five. This child may be, and is in fact, actually educated with the confirmed idiot; and there is no inconvenience, but advantage, in their being treated alike.

The same could not be said of the following case which is now as rarely met among idiots, as it frequently was

thirty years ago in the "*hospices*" and poor-houses. He looks dignified, sad, depressed, wistful, immovable, idiotic—but worse than an idiot, he is a dement. There does not seem to be a sensible difference between them, but idiocy is accompanied by some sensorial disorders, begins young, by its worst symptoms, and generally ends quite early; whilst dementia commences in later life, is accompanied by an insidious touch of paralysis, especially of the sphincters; it soon alters the *alæ nasi* and the external auditory apparatus, and eventually may continue to a great age, ending by its worst symptoms.

A young lad who looks and stands like an idiot, with deep, dull eyes, hollow cheeks, thin hanging hands, flesh gone from his long, lank limbs, and empty frame; a prey to fever, languor, inappetence; tired of everything, forgetting instead of learning, avoiding company and light, sleepless yet never wide awake, speech embarrassed, mind absent, hope, gayety, cheerfulness, friendship, love, future, all given up for the worship of one's self, and of a few apparitions evoked by the mania of self-destruction; his tendency is toward early death, through imbecility or dementia.

Though insanity is not common among children, it is easily mistaken in them for idiocy, notwithstanding that every day marks a new difference between the two. Thus incipient insanity does not affect the general, nor the special movements as idiocy does; nor the general, but the sensorial sensibility, producing mistaken sensations as hallucinations, that idiocy does not. Intellectually, the young insane may learn easily or with incredible facility;

but has rarely the comprehensive retention which amasses true learning; the idiot has a negative will or none, the insane has a deep, fated-like determination. We have observed two classes of these children laboring under a more or less confirmed tendency to insanity. One has a firm step, bright colors, and general richness of tissue; his ears reddening occasionally, and his eyes flashing instead of quietly looking. Incapable of attention though he tries hard, loving and impressible, there may be something the matter with his speech, as periods of mutism and of loquacity; thus, by times, he cannot repeat a word, and at others he will spontaneously emit several sentences. He commands with difficulty to his movements, as those necessary for drawing, gymnastics, etc. He is clean, has no difficulty in dressing himself, his hands are perfect, no function seems altered; but the older he grows the stranger he looks, till finally he gives signs of incoherence. The other one is a fine child too, physically, but rather pale and angular. His traits of character are more strongly delineated than those of the first. His features are sharper, his look more shaded by the brow, his mind deeper, his intellectual culture easier, his moral propensities worse. He is jealous, cruel, unflinching, yielding to force only, losing nothing of his natural tendency to cruel sprightliness under a temporary pressure of authority. He has of the idiot neither the gentleness, the blank look, the deficiency of understanding, the timidity, the obedience, the affection. Every day shows his moral character by more and more of these traits which make him dangerous, and fit him only for seclusion. When quite young; chil-

dren such as these are readily accepted in the institution for idiots, because they do not then apparently differ from these latter, as the baby idiot looks like a well-born child, as long as both cannot make any comparative show of activity; so, as long as there can be no display of reasoning or of human passions it is nearly impossible to discriminate them. Of the two kinds of children with insane propensities, the first needs more education, and is more impervious to it; the second requires more moral training, and is the more refractory to its rules. We have studied only those two classes of children tending to insanity, but we think that there are several more.

Next, and last, we notice the imbecile who, whatever may be the origin of his infirmity, is generally mistaken for an idiot. He is rarely affected with muscular or sensorial disorders, unless from accessory causes, such as chorea, or hemiplegia, or made worse by self-abuse; his affection is more referable to the condition of the nervous centres, and is of an intellectual cast, bearing on attention, memory, reason, etc. He has arrived at that condition of mental degeneration by any of the circumstances which produce deficiency of nutrition, and cause idiocy in early life, and imbecility in subsequent years. The imbecile having, previously to the arrest of his development, acquired experience of things and persons, and gathered, consequently, instinctive and social feelings; the same cause which leaves, at the outset of life, the idiot incapable, ignorant and innocent, leaves, later, the imbecile self-confident, half-witted, and ready to receive immoral impressions, satisfactory to his intense egotism. Hence, we see him coming forward

with an ungainly aspect, making show of his trinkets, and offering them for trade ; he can read, more or less ; speaks confusedly, and recites verses with pouting emphasis and sprinkling of saliva. He might do some kind of work which may be accomplished by the repetition of simple movements, if his mind could be steadied to any employment. He delights in the company of street boys, who joke, cheat, and abuse him. These tastes and habits educate him to boasting, lying, cruelty, artifice, jealousy, and even to plotting robbery and arson, with a strong dose of hatred for those who advise him to take a better course. Later, these moral depravities make a lodgment in his brain, in the shape of false reminiscences or spurious images of impossible facts ; he mistakes his best friend for his foe ; does not feel safe ; has seen eyes following him in the night, or a suspicious light cross his room ; he heard threats behind him ; he knows the fellow, and will break his neck. The next we hear of him he will be in a prison, or insane asylum, or involved by sharpers in a law-suit ; to-day he is an imbecile, to-morrow he may be a criminal.

Supposing no omission, here are five classes of persons confounded with idiots without reason, nor the excuse of necessity. This confusion bears upon their position educationally, socially, and legally.

Four of the five classes above enumerated require, like idiots, the benefit of a physiological education ; and as long as there is no provision made, especially for each, their wholesale admission with idiots looks like a matter of course, and is very much so, as far as philanthropy is concerned. Even in respect to education proper, we are

inclined to think that the teaching part of the method is calculated to do equal good to these unfortunate children. But all is not teaching in our training. Deeper than the exercises, than the lessons, than the incitations addressed to activity and intelligence, lies the foundation of the work—in the moral training; incessant influence, which is like the spiritual atmosphere of a place of this kind, intended to correspond to the wants, sympathies and resistances to be encountered in idiots. If we except the backward children, the other classes require different and stronger moral agencies to act upon them; they need a moral training whose character may be defined by establishing its situation midway between that of Leuret for insane, and ours for idiots.

But if these children, uneducable in ordinary schools, and unprovided with special ones, must be, for a time at least, indiscriminately treated with idiots, this necessity does not justify their confusion with them, nor the social indifference. Many of them would improve, many more would not have fallen into bad habits and criminal partnership, if they had only received the attention bestowed on ordinary children; double dereliction, from which they and society subsequently suffer. In this abandonment the child with insane propensities loses sooner and more completely the balance of his judgment, or the control of his passions; the imbecile familiarizes himself with all sorts of eccentricities of the lowest order; the backward child lapses into the solitary walks of the youth who avoids company, to not be disturbed in his task of self-destruction; and the idiot shuts himself up more and more in his isolation. Hence, by a just return, society is occasionally

startled by deeds of horror committed, not so much by these irresponsible beings as by those who neglected their duties towards them. Even now, that State and National institutions have been founded for the improvement of idiots, these children and the others above enumerated, when sent out from their schools, some imperfectly improved, some very little, some without means of support or of starting in the world, some without friends or family worth claiming, will be exposed to imminent dangers to themselves and others, till asylums shall be provided for their refuge, not so much against their own vices as against the incitations of vicious people.

The legal status of idiots relative to property is that of minors, without reservation or attenuation for the kind, the degree, the stage, the tendency of their infirmity. Cases susceptible of improvement or not, cases of limited but rational understanding, or of unsound reasoning and ungrounded aspirations, are reduced by law to the same present and future incapacity of possession and usage. It seems unjust, now that idiots are improved, can work, spare, behave more or less, to submit them to the same legal incapacities which must rule the maniac who mistakes gold for cinders, and *vice versa*, or the imbecile ready to make a fortune out of incessant barterings in which he means to cheat, and is himself cheated. The patrimony of the child who may improve at some cost, must not be left without control in the hands of persons interested in keeping him incapable. In England the Sovereign, here the Governor of the State is the guardian of the idiot. Evidently this trust is too distant to be effective. The Governor

should delegate his guardianship to the Superintendent of the State institution, who is competent to advise about what might be profitably expended for the improvement of the child, and what part of his property or income may be progressively intrusted to him as a means of learning the management of his worldly affairs. Anything short of this is unjust, and leads to legal spoliation.

Their personal rights are no more respected; though, under the steady improvement of their aspirations, idiots are known to have become worthy of the blessings that society offers and religion sanctifies.

Criminal legislation treats idiots yet worse. As we just said, out of their institution nothing prevents them from falling into the snares of bad company but their good natural tendencies. But, if they succumb, tossed between lawyers who hold them up as the lowest fellows, or the most cunning of criminals, findings and judgments agree in sending them where they cannot improve, but must grow worse. Although any kind of confusion is painful to the mind, one might conceive that the dement might be allowed to rot in the same place of confinement where the maniac raves; but who could see without sorrow the idiot sent, for an unconscious or doubtful crime, where the imbecile finds himself at home among men of his stamp, instead of being sent to the institution where he might be educated, or to an asylum where he might be protected against bad influences, as the case might demand.

We can, therefore, already perceive that social and legal exigencies, and the recent creation of schools for training idiots, naturally lead to the complementary foundation of

asylums for such as have no family, or are only partially improved. This asylum shall be a happy home for those who could have no other, if its management be given as a reward to those devoted women and men who have already spent many years and turned white their young hairs at the task of educating idiots; any other persons would perpetuate in the new asylum the hard practices of the *hospices* and the poor-houses.

But while we demand more social love, more legal protection, more home comforts for idiots to keep up with the recent improvement, we must not forget that the institutions already founded for them, and the physiological method of teaching, will shed more lustre on this century than the institutions and methods for teaching deaf mutes did on the last, if we are as conscious of our duties as we are of those of society toward our children. In their name we have asked and received palaces, annuities, and we may even say the incubation of their feeble capacities from hundreds of devoted persons; but are we sure that we have understood our subject in all its grandeur, and kept it on the high philosophical ground upon which it can stand equally the test of criticism and of admiration?

True, idiots have been improved, educated, and even cured; not one in a thousand has been entirely refractory to treatment; not one in a hundred who has not been made more happy and healthy; more than thirty per cent. have been taught to conform to social and moral law, and rendered capable of order, of good feeling, and of working like the third of a man; more than forty per cent. have become capable of the ordinary transactions of life under

friendly control, of understanding moral and social abstractions, of working like two-thirds of a man; and twenty-five to thirty per cent. come nearer and nearer to the standard of manhood, till some of them will defy the scrutiny of good judges when compared with ordinary young women and men.

But this success, honorable as it is, constitutes only one of the objects to be attained as the honest return due to society for the generous support afforded to those who took charge of the new establishments. If these were founded for idiots, idiots seem permitted to exist and are expensively gathered and treated, not only for their own welfare, but for some social and scientific objects which disclose themselves, when we advance in the road of progress, as so many new duties for us to perform. Among these *raisons d'être* of idiocy, the most urgent, the most neglected arises from the light to be thrown on all the branches of anthropology by sound and complete observations of idiots from the cradle to the slab. But to this day there is not one complete observation followed thus far. This point we must reach. Being given children whose condition prior to birth, in infancy, youth, and manhood is perfectly established; having studied the deficiencies and the disorders of their functions, their intellectual progress and physical development under a physiological training, our love for them and their fellows must follow them with scalpel and microscope beyond life, to mark the peculiarities of their organs as we have done those of their functions. It will be impossible to collect and compare fifty such observations (and that would be about one for each institution

without being surrounded by new light on every important point of human philosophy; not only upon the questions bearing directly on idiocy, but upon all human questions pertaining to causality between organs and functions. These questions vainly asked from commonplace subjects, or from the sick or the insane, will be promptly answered by the comparison of a few monographs of idiots. That these exceptional children are better subjects, are in fact nearly the only subjects fit for the study of the impending questions of anthropology, will be readily admitted; considering the relative sameness of the organs and of the functions in ordinary subjects; the alteration of organs rarely followed by corresponding alterations of functions in the sick; the functional disorders not often accompanied by alteration of organs in the insane. And on the other hand, considering that idiocy is not an accident like illness or insanity, but a condition of infirmity as settled as other permanent conditions of life; that it presents to our comparison all the elements of a *norma*, whether we analyze the functions, whether we observe the organs; this correlative status of the organs and functions in idiocy is at the same time so certain and so extreme that it affords unequalled data to the student of comparative biology.

Therefore, we set down as one of the most important duties of the new institutions the production of these monographs, which need not be numerous, but perfect. These monographs are our debt of gratitude toward society, which wants them to light her steps onward; toward idiots, who will be benefited by a better comprehension of their

condition; and toward the sciences accessory to anthropology, which have never been furnished with so forcible and stable elements of observation of human nature as those accumulated under such circumstances; here, and very likely nowhere else at the present hour, rest the expectations of the inquirer.

But since twenty years, this part of the labor has been left aside for the more urgent object of founding the new institutions on a solid basis. Now everything is ready for the triple work of improving idiots, of studying human nature from its lowest to its highest manifestations; and of testing on idiots the true physiological means of elevating mankind by education, which will be the object of the following pages.

PART II.—PHYSIOLOGICAL EDUCATION.

Part II.

PHYSIOLOGICAL EDUCATION.

IDIOTS could not be educated by the methods, nor cured by the treatments practised prior to 1837; but most idiots, and children proximate to them, may be relieved in a more or less complete measure of their disabilities by the physiological method of education.

This method, object of the present exposition, consists in the adaptation of the principles of physiology, through physiological means and instruments, to the development of the dynamic, perceptive, reflective, and spontaneous functions of youth.

The principles are not the method, the means, and instruments neither; but the co-action of both constitutes the method of education contrived for idiots and already appreciated as "an example worthy of imitation, of the alliance of the moral and physical sciences." *

Therefore, the lessons of the Hospitals of the Incurables and of Bicêtre, of the schools at Boston and Syracuse, have not been given through the idiots in vain. Visitors came in, and every one carried away some of the principles or instruments used there, according to the chances of a daily practice. Seeing this, physicians could no longer write on diseases of children without expatiating on moral

* Rapport de MM. Serres, Flourès et Pariset, à l'Académie des Sciences. Paris.

or functional treatment, nor teachers go back to their schools without carrying with them some of our sensorial gymnastics, imitation exercises, etc. In all this, truly the idiots were the doctors and the teachers. They taught as much as could be seen and understood in a visit; they taught, besides, that idiots are not the repulsive beings that our neglect made them, and that any land would be blessed where women and men would devote themselves to the task of elevating these unfortunates. Hence, institutions for their education have sprung up everywhere, and the physiological method was scattered piecemeal in every educational establishment.

This mode of spreading a system, by breaking it up as soon as formed, if not flattering to inventors, seems to be quite a favorite process of civilization. J. R. Pereire, after teaching for forty years the deaf to speak, saw his method reduced to mimic language and mutism. J. J. Rousseau did not hear bestowed upon the writings of J. P. Richter and the school of Pestalozzi, the encomiums deserved by his own *Emile*. Amoros had hardly given the last touch to his compendium of gymnastics than he saw it broken in fragments by the limited comprehension of his own admirers. Itard had no knowledge of the application of his object-lessons to the *Savage of Aveyron* by the Home and Colonial Society. Jacotot assisted at the apparent burial of his synthetical teaching of reading by words first, which teaching has been revived so successfully by Dr. Wilbur. So the onward movement takes place, through other oscillatory movements, by ebb and flow; and progress is accomplished even by apparent retrogradation. In this

wise the truncated application to public schools of the physiological method of training has made, henceforth, its total application an unavoidable necessity; and its more comprehensive employment in several institutions has enriched it with many new devices, derived from the principle, by practical ingenuity. Though such a transitory season is not very favorable to the reassertion of the fundamental principles, it is the very time when we need it most.

Our method, to be really physiological, must adapt itself in principles as well as in its means and instruments, to the healthy development and usage of the functions, particularly of those of the life of relation: the apposition to be true must leave no gap, suffer no discrepancy. Man being a unit, is artificially analyzed, for study's sake, into his three prominent vital expressions, activity, intelligence, and will. We consider the idiot as a man infirm in the expressions of his trinity; and we understand the method of training idiots, or mankind, as the philosophical agency by which the unity of manhood can be reached as far as practicable in our day, through the trinary analysis.

According to this Trinitarian hypothesis, we shall have to educate the activity, the intelligence, the will, three functions of the unit man, not three entities antagonistic one to the other. We shall have to educate them, not with a serial object in view (favorite theory of A. Comte), but with a sense of their unity in the one being.

Activity, besides its unconscious and organic functions, divides into contractility and sensibility, with their specific tendencies; Intelligence branches into many sub-functions, and Will into its protean expressions, from love to hatred.

The predominance of any of these functions constitutes a disease; their perversion leads to insanity; their notable deficiency at birth constitutes idiocy, afterwards imbecility, later yet dementia.

Physiological education, including hygienic and moral training, restores the harmony of these functions in the young, as far as practicable, separating them abstractedly, to restore them practically in their unity.

This is the psycho-physiological principle of the method.

Before deducing its applications for the treatment of idiocy, we must see how it may be made available for its prevention.

Like most maladies and infirmities idiocy may, to a great extent, be prevented.

When dependent on local and hereditary causes, the prevention follows, as a matter of course, the avoidance of such conditions. Already, in the Alps, many pregnant women migrate from the valleys to the uplands; the opening of routes in these long secluded localities permits their population to marry outside of their blood-relations, thereby sensibly diminishing cretinism and idiocy.

But idiocy is not all endemic or hereditary. We have seen it creep out from the couch of the young, of the healthy, of the talented, as well as from that of the lowly or of the vicious. Young men and women qualify for all sorts of social and scientific attainments, and disqualify themselves for the task which ranks us with the gods. In one class, the privations are suffered particularly by girls and newly married couples; in other classes stimulants of all kinds are used nearly from infancy, instead of being

kept as the solaces of old age. Intellectual or business excitement has taken possession of both sexes; a young woman with child has to contend with social difficulties, as if she were not engaged in a labor which requires all the resources of her constitution, supposing she has any. These exactions, of food from the ill-fed, of strength from the weak, of innervation from the enervated, in favor of the future being, do not seem rational, and are too often followed by the ruin of the mother's health, and by the moral or physical crippling of her child. How much more sensible it would be for young couples to try to live according to hygienic rules, to keep the pregnant woman in comfortable conditions, without anxiety, with an abundance of substantial food, with air for two, day and night, and with plenty of exercise, sooner than to act as if relying upon the wisdom of the embryo to feed himself out of no food, and to keep himself unmoved amidst the emotions of his mother. This is not to say that idiocy depends exclusively upon voluntary circumstances; some accidents may be prevented, some not. Hereditary affections and nervous disorders transmissible in some mutable form, accessory diseases accompanying pregnancy and destroying the powers of nutrition, such as disordered appetite for unnutritious food and drink, vomiting, costiveness, etc., cannot always be counteracted by professional interference; but in such cases the skill to correct disordered functions, to prevent steady impressions and sudden shocks, is the highest attainment of our art.

The new-born infant escapes the dangers of intra-uterine life, to enter into another crisis of its development.

The withering of the cord, and the maturing of the breast, declare the new relations of nutrition between mother and child; but this sudden change is fraught with danger. To this change, and to the transition from a liquid to a gaseous medium, is attributable the loss of substance, of weight, and of caloric, suffered by the child in the first week; deficiency of nutrition from these causes producing convulsions, idiocy, and death. We can prevent these accidents by a proper control over the internal and external means of keeping up the warmth. Besides, at that time, the brain is soft, almost pulpy; has a reddish tint throughout, without well marked differences between the white and grey substance, nor well defined circumsolutions; the nerves only being firmer, the general or tactile sensibility precedes all others. Hence, in early youth, and particularly at the time when the body of the new-born actually loses weight, caloric, and substance, if it takes nourishment, this is mostly applied to the consolidation and distinction of the two substances composing the encephalon. But if this nerve-food is not timely supplied to the infant, it becomes idiotic, epileptic, paralytic, or hydrocephalous, whatever may have been the cause of the deficiency of nutrition.

This effect of the want of nutrition is not peculiar to the nervous system; it rules the growth of all the other systems, and develops nearly all of the constitutional affections of childhood. We can trace the beginning of diseases of the long bones, of the spine, of the circulatory and respiratory apparatus, etc., to that same cause, deficiency of nutrition at the very time when each of these

organs required the most effective nourishment. This explains why each of these constitutional alterations must be expected at certain periods of life, idiocy at first, rickets, phthisis next, etc., till dementia and paralysis close the series. Thus, deficiency of nutrition bears alternately upon the apparatus whose growth or temporary activity requires the most nutriment. This law traces our duty to the new-born infant.

The health of the mother, her labors, inactivity, food, drink, aëration, comfort, happiness, having a direct bearing upon the state of her milk, and her milk upon the nutrition of the infant, call our attention before everything else; because, owing to the want of expression of the passive little being in the first weeks of life, irreparable mischief may be worked by bad food, before one could be made aware of it.

Next in importance comes the watching of the deficient abilities of the child, and particularly the distinction of their constitutional and external causes; many infants look like idiots, or bid fair to become such, who are only crippled by something or somebody, and many idiots continue for months their marmot-like life, who are thought only dull babies.

At this stage of life, where all the impotencies of babyhood do not differ from incapacitation by infirmities, the difference may be established only by reference to the age appointed by nature for the evolution of each function. Among the first, extending the arm, opening the hand, grasping, is a series; looking, turning the head upon the axis, raising the spine to the sitting

posture, is another ; hearing voices, listening to catch sounds, reproducing them to amuse the organs of audition, is another of the endless groups of capabilities which spring up, one after another, and which are so long or vainly expected from idiots.

Who could watch over the tardy coming of these functions better than a mother, if she were timely advised by a competent physician ? The skill of the latter is of no avail without her vigilance, and her zeal may be very blind, even mischievous indeed, without his advice ; stuttering, squinting, and all sorts of bodily defects, besides the perpetuation of the worst symptoms of early idiocy, are too often due to the want of this concerted action of love and knowledge.

As soon as any function is set down as deficient at its due time of development, the cause must be sought and combated ; if external, removed ; if seated in the nervous apparatus, counteracted by the earliest course of training and hygienic measures. The arm of the mother or nurse becomes a swing or a supporter ; her hand a monitor or a compressor ; her eye a stimulant or a director of the distracted look ; the cradle is converted into a class-room, gymnasium, etc.

If the features of idiocy are decidedly marked, the mother must often visit with her child the nearest institution, see what is done there to remedy similar cases, and receive the instructions necessary to carry on the same treatment at home. If this prove costly at first, even to the State Institution, it will in the end save the State and families the expense of several years of after-teaching,

besides accomplishing more fully the object of the treatment.

In this manner, when the time arrives for admission into the school, the child feels at home among the exercises, pleased by the general activity, music, and amusement of the place; has no resistance nor antipathies to what it has seen from infancy, and cannot fall at its entrance into the position of a stranger, subject to nostalgia and its consequences.

This double and alternate education of the infant-idiot at home and by contact with the school, brings us closer to the method of physiological training.

That child, going through the institution at first on the arm of its mother, soon feels the influence of the general training, even in his apparent inattention, and is thereby better prepared to be individually carried through the same movements. Home again, and in the silence of privacy, the child's attention will be more easily concentrated upon some of the facts or actions whose outlines are yet faintly delineated in its sensorium, at the same time that its resistance to fresh contact is lessened; the double result is new perception and increased spontaneity, oscillatory strides from the general to the special, and *vice versâ*, towards the completion of its perceptive, reflective, and spontaneous faculties.

These alternate reactions of the perceptions on spontaneity, of the will on reflective agencies, is the *modus operandi* of the physiological process of education for idiots, for children, for mankind. They take place in the terminal loops or plexuses which are scattered in the

integuments like so many peripheric brains ; in the sensorial and motor ganglia ; in the intellectual ganglia or hemispheres. Through the conductors of motion and sensation, the central and generalizing organ receives the external impulse, and transmits its orders to each apparatus of action.

This double current forms a functional circle which cannot be interrupted without being destroyed. Take away one of these currents, and instead of causing a complete action, we have only the beginning of one. Whether images are sent from acute senses to an encephalon which cannot register, compare, or classify them, or whether centrifugal aspirations cannot be realized by dead or dead-like apparatus of transmission and contact ; in both cases, opposite as they are, the result is the same—isolation, incapacitation. So, fine senses and good muscular development, if the will has no command upon them, cannot respectively feel nor do anything more than if they were paralyzed ; and leave the child impotent, with all the instruments of potency less the central one. And in the same manner, an active encephalon deprived of important means of communication with the world, or of means of sensorial analysis, may create superficial idiocy, whether the isolation comes from general paralysis, or from the loss of one sense only, or from the loss of several.

Now let teaching do, at large for mankind, what infirmity does for idiots and their congeners ; let perceptions be sunk in a central organ unprepared to generalize and fecundate them ; or let the generalizing agent be sent,

through its spontaneous impulses to external organs unprepared for movement or for the correct perception of feelings, and the result will be at least a lowering of human capacity ; but let idiots be taught by either of these half teachings, through one-half only of the psycho-physiological circulus, and you may well set down their improvement as impossible, since in this wise you want to improve them by the very process which would make them idiots, if they were not such already. This cannot be too much insisted upon, that whatever development be given to the sensorial faculties, the reflective and spontaneous must receive a corresponding culture, and *vice versa*.

Exclusive memory exercises do not actually improve idiots ; rather the reverse : they impede their future progress. Better one thing thoroughly known than a hundred only remembered. Teaching so many facts is not so fruitful as teaching how to find the relations between a single one and its natural properties and connexions.

Conversely, protracted tension of the will and reason upon unsubstantial objects and purposes, if it would be futile in the case of idiots, does favor in other schools the production of monomania and hallucinations, even epidemically. The avoidance of these exclusive practices, reduced even into theory by certain teachers, will insure the unity of training so important to our success.

Therefore the teaching of a geometrical point must not make us forgetful of the line to which this point belongs ; the line, of the body it limits ; the body, of its accessory properties ; the properties, of the possible associations of

the subject under consideration, with its surroundings: an idea is not an isolated image of one thing, but the representation in a unit of all the facts related to the imaged object.

The completeness of the method to be used is of the utmost importance, and must be enforced as well in regard to the object of the teaching as to the unity of the child. But before beginning our close adaptation of the whole training to the whole child, we must make sure of the fitness of the latter for it. We must not put an idiot to work or to study before ascertaining every morning his condition. A friendly look at his face and a shake of the hand, a patting of the head, if necessary extended to the temples and posterior base of the cranium, will tell if anything be the matter, and if you have to extend your investigations farther. With idiots the questioning by palpation is the surest; ask the different organs, and they will tell you how the child feels, better than himself, better than his nurse. We must not permit any dejections to go unnoticed, unless we want at some time dysentery and the like to run wild through our wards.

The same attention is required if any inflammation of the eyes appears, possible initiator to purulent conjunctivitis. The spread of any parasitic disease is to be cut short with the same vigilance. The health of the feet and hands has to be often ascertained, particularly in winter.

In dressing the children we must have regard not only to the season, but mostly to the sudden changes of tem-

perature, and to certain idiosyncrasies. Dress them as you like in regard to fashion, but comfortably and easily about the joints and chest, so that they can move and grow.

We must not send a child to study or duty without his having taken food. The staple food for these children is milk, bread, eggs, and ripe, red fruits; meat once a day is enough. But every day or every week brings new demands on account of changes of season and temperature, of personal health, or of imminent epidemics; and also because variety is of itself food.

The nutrition of idiots is to be attended to closely, if we do not want to see them, or part of them, decay.

We must not begin their day's work like a duty, but like a pleasure, with walks, sports, music, and end it in the same manner; so that if we have not made them perfectly happy through our daily routine, we can send them to bed cheerful.

After the morning music, the first labors are those in which the most of attention may be exacted, and true learning gained. At later hours, more is to be derived from excitement than from concentration of mind.

When teaching a new object, we must not too often put our point forward, but on the contrary put it behind something well known, as a corollary to what was previously acquired, an unavoidable deduction, an of course. If we let the child feel that the ground is new, he will recoil; if we do not, he will think himself on the old one, and go ahead without increased diffidence.

In this direction there is a mark to which we can carry

our pupil forward ; let us appreciate it. If we leave him below that mark he loses the opportunity to reach it, perhaps for ever, dispositions of mind never coming back identical in presence of the same facts ; and if we try to push him farther than his attention can support him, the whole acquisition may fall "in a pie." Therefore when any tension of the muscles, senses, or mind has attained its object, let us remove the pressure gently, for fear that a prolonged tightness would undo the deed or deface the impression dearly acquired.

When we exact from a child, in this manner, what he can only do with the help of our physiological artifices, we should study his features and see that he is not overcome instead of being raised by the process ; we must beware of protracting the tension till his countenance shall give the signs of mental depression, as knitted brows, blank looks, white circle around the mouth, dejected posture ; if we have been so far unmindful in our eagerness, let us hasten to take him off gayly to some pleasant exercises or music, remembering that we were at fault.

Though the idiot has much to learn, new things and studies must be dealt out sparingly to him, taking in consideration for the nature as well as for the quantity of work exacted, the heat, the cold, the dampness, all external reagents on the nervous system. Spring and fall are the times to push a child forward ; winter and summer to inure him to excesses of temperature.

Let it be one of our first duties to correct the automatic motions, and supply the deficiencies of the muscu-

lar apparatus; otherwise, how could we expect to ripen a crop of intellectual faculties on a field obstructed by disordered functions.

We must teach every day the nearest thing to that which each child knows or can know.

We must never confide to automatic memory what can be learned by comparison, nor teach a thing without its natural correlations and generalizations; otherwise we give a false or incomplete idea, or none, but a dry notion with a name: what enters the mind alone, dies in it alone; loneliness does not germinate anything. The contact of two perceptions produces an idea; the contact of a perception with an idea produces a deductive idea; the contact of two or more ideas with each other gives rise to both induction and deduction, and ideas of an abstract order.

Contrast is a power; children will understand, and do by apposition of differences what they could not by single presentation, or by apposition of similarities. In other cases, the reverse proves successful; similarity is a power, too.

We must make the contrast not only an instrument of learning, but one of rest and repose. To that effect, things dissimilar are to be taught in apposition; an exercise through the eye, to be followed by one through the fingers; sitting, by standing; attentive silence, by emission of voice; doing this we give food to the mind as well as rest by variety, if our variety has a physiological and intellectual meaning.

Repetitions please children; as rhythm and rhyme are

the lullaby of nations, we must take advantage of them in teaching the speech and in the general training.

Training is understood to be special and general.

1st. In relation to the matters learned ; 2d, to the number of children taught ; they must alternate. An exercise of analysis is followed by one of synthesis, an individual teaching is followed by a group teaching. The same thing has to pass by the double process of teaching, as the same child has to pass through the single and group learning : Everything taught and every function trained by impression and by expression. In this manner, what has come into the mind has to come out of the mind, and what was perceived by the attention of one isolated child, has to be expressed through the impulse of a whole group by those composing it. The general impulse gives a better comprehension to the individual, the individual comprehension gives a stronger impulse to the spontaneity of the groups.

For the same purpose children have to be as soon as practicable taught and teachers alternately ; not for the value of what they teach (though children often make children understand better than we can), but because the child employed to teach another learns more himself than his would-be pupil, as well upon matters of fact as by exercising his nascent power of command.

Our instruments of teaching must be those which go directly to the point. In view of that necessity, we must use objects, pictures, photographs, cards, patterns, figures, wax, clay, scissors, compasses, glasses, pencils, colors, even books.

Let us carry all our exercises through pure air, and never command in-doors what can be accomplished without.

We must not forget to create gaiety and mirth several times a day; happiness is our object as much, nay more than progress, and children will not be sick if they laugh.

We reserve for another part the exposition of the principles involved in the moral training; it would be more philosophical to emit the whole of them at once, but for the sake of clearness we divide once more in theory what must be a unit in practice, the physiological training.

Training and education begin where previous functions and acquirements ceased. The beginning of the treatment of each child is where his natural progress stood still; so many children, so many beginnings. For every function or capacity the start varies as much. Such a child uses one series of organs to a certain extent, and other series to a lower or higher point. One child is forward in talking, and backward in the use of his sight; another forward in imitation, and backward in comparison, etc., etc. From these discrepancies in the range of the diverse functions in different individuals, result the necessity of presenting the means and instruments employed in improving so many backward functions, as if all the anomalies belonging to idiocy and its congeners could really be found to the same degree in all idiots. The mind of the reader can easily make its way through the fallacies of this unavoidable generalization.

Our system of education is the process of accumulating

in children strength and knowledge; to create in men power and goodness.

The first want of a people and of an individual is strength acquired by proper training of their muscular system. The nations that flourished did so after or during long exertions, whilst, on the other hand, the clans that decayed by cretinism or otherwise, were shut up in inaccessible valleys. Of all the incapacities of idiocy, none are so striking and none so detrimental as those which affect motion and locomotion; their direct effect being to prevent the development of force, their secondary result to prevent the reaching of any instrument of knowledge.

The deficiencies and the anomalies of motion are extremely varied in idiots, from nearly absolute immobility to the inefficiency of the extremity of the fingers, or to a slight swinging of the body in walk or station. Both deficiencies and anomalies, deep or superficial, are the subjects of the education of the muscular system.

(We warn the reader, for the last time, against the fallacy of the words we employ, because they are not adequate in comprehension to our meaning. Here, for instance, it is impossible to take hold of the muscular apparatus without acting on the nerves, bones, etc., as it is equally impossible to command these special instruments of activity without exercising besides a reflex action on the intellect and on the will. Therefore it shall be understood that we mean only that our action shall be mostly aimed at one set of organs—for instance, those of motility now. So much for our infirmity of expression.)

Our Gymnasium differs from the ordinary one in its general object, being intended to create an equilibrium of the functions, not by the towering of the muscular above the other systems, but, on the contrary, by paying more attention to the nervous, as being the most shattered in idiocy. But even with these reservations in favor of the general training, we confide mostly in the exercises borrowed from the daily labors and amusements common to all children. The spade, the wheelbarrow, the watering-pot, the bow, the wooden-horse, the hammer, the ball, are greater favorites with us than the general gymnastics whose instruments are to be employed sparingly, and whose tendencies to exaggeration are to be avoided. The Grecians were using it to excess, for which Plato reprimands them, as well as for the other excesses in over-cultivating the intellectual faculties—the former making prize-fighters, the latter sophists. Nothing is so much to be discountenanced as this one-sided education.

In our case no excuse could be proffered to palliate a similar mistake, because we aim at a plain, comprehensive, harmonious training of the whole child. Our gymnastics, in its generality, is simple, managed with few instruments, and mostly of the kind which received, several years after it was adapted to idiots, the pretty name of *Calisthenics*, under which it entered the fashionable academies. Our special gymnastics is by far more important, on account of its adaptation to the deficiencies of functions and of organs, by the correction of which it touches to orthopedy, and to orthophreny. Though the instruments of both these gymnastics are few and unos-

tentations, whilst our intellectual means of exercise are many, that disproportion is right, and pleases us as precisely representing the proportion of the elements of muscular training necessary for our main object, the intellectualization of the muscles.

The absolute or complete abolition of the movements of relation dependent on the absence of the impulse of the encephalon, and leaving to the idiot only the involuntary contractions of organic life, dependent on good spinal and sympathetic system, must not be hastily attributed to paralysis. No doubt there are idiots paralyzed, but their immobility is more a cause than an effect of idiocy. On the contrary, the incapacity of movement here considered is a psycho-physiological phenomenon, whose incomplete analogue is found in the condition of a child who, having been kept in bed for months, tries to walk. He attempts to transmit the orders of his will to the distant organs of locomotion, but in vain, till his mother forwards his foot and teaches the nerves and muscles the lost art of walking. The idiot does not learn to walk so fast as this convalescent child, for several reasons: He never did walk, his immobility has lasted all his life instead of a few months, and we must create in him the desire that he never had of walking; and second, his will, far from being ready to command anything, has never yet suspected nor tried its wonderful powers.

Infantile paralysis, even complicated with extensive contractures and chorea, as it is often, is not necessarily beyond the resources of our art. As means of treatment

we would suggest general and special nutrition of the affected limbs, general and special excitors of heat and electricity, general and special gymnastics, sea-bathing, shampooing, kneading the parts, commanding, exacting the movements, and a few select medicinal agents unnecessary to suggest to confrères.

We meet more frequently with the partial loss of movement expressed by the fixedness of the child where and as he is placed, standing, lying, seated any way, or by the impossibility of his hands taking hold of anything, even carrying food to the mouth; he is immovable of his own will, movable only by another's as by an external spring.

This relative immovability of the idiot, of the demented, too, the result of inertia, has no parentage whatever with the immobility by which a man or an animal assembles his forces to throw them into action; this is a positive, the other a negative attitude. From positive immobility springs an active determination; in negative immovability resides the power to nearly neutralize any external inducement or any internal motive to action. This immovability is therefore the first expression we meet with of the radical elements of idiocy, the negative will. Henceforth we shall find many and the most varied incapacities, all doubled, made nearly indomitable by the silent protean "I will not" of the negative will. Impossible now to forget it, and whenever found it has to be treated, as we will do presently, where it would perpetuate, with incapacity of motion, the whole train of idiocy.

But we are often prevented from at once overcoming this obstacle by the interposition of another already men-

tioned, under the head of automatic, mechanical or spasmodic motions. As long as these motions exist with or without negative immobility of the rest of the body, we cannot expect to see the child improve in willed action nor in active immobility; therefore it is our duty to try to overcome it all at once when we can, or as soon as possible.

These anomalous movements have their seat, not always, but mostly in the wrist and fingers. We have described their various characters, and shall say no more here than is necessary to the rationale of their treatment. In automatic movements, the child uses one part of himself, one finger or one eye, as if it were an automaton whose recurrent movements produced his beatitude. In mechanical movements the child uses, besides paper, thread, metals, anything whose breaking, touching, ringing, pleases exclusively one of his senses; not the best—on the contrary, the most diseased. In spasmodic movements the child has no object, or if he has any, such as striking something or at somebody, it is prompted by a blind, sickly impulse.

Each of these movements is best combated by exercises which offer the strongest contrast to the bad habit. Automatism is best done away with by constant employment of the general forces; mechanism, by the intelligent occupation of the delinquent parts and the avoidance of the things worked at mechanically; spasmodism, by raising obstacles, the painful contact of which will cause recollections sufficient to prevent its recurrence. But if each of these disorders of contractility recedes be-

fore the employment of particular means, they disappear only under its steady continuance, corroborated by the long application of moral training. Nevertheless, we must expect, and may reasonably promise to cure the mechanical sooner than the automatic or spasmodic motions: the latter being generally subordinate to an accessory disease, variation of the choreic type.

Happily the exercises undertaken in view of destroying the disordered motions, may be at the same time calculated to promote willed immobility and orderly movements; consequently, both objects may be attained at once, and described at the same time.

Setting aside these muscular disorders we find ourselves in presence of the whole cortége of muscular incapacities incumbent on idiocy, every one of them presenting its claim to our care as foremost. Attending to one would be as neglecting the others, or like treating one symptom to the exclusion of others, disregarding the disease itself in its unity. In our case, for instance, every particular incapacity of the legs, fingers, etc., is subordinate to the impotence of the general activity; we will not, therefore, pause on the threshold to look at the inefficiency of a single part, but consider the incapacity of the whole motor function.

Muscular activity is a function accomplished by the contraction and relaxation of the muscular elements; movement taking its fulcrum in immobility. Therefore, before and simultaneously with, directing the training towards the acquisition of some special movement, we must accumulate its greater energy in view of the con-

centration of activity into positive immobility, wherefrom all action springs. Immobility is taught in various attitudes—standing, sitting, reclining one way or another, on some gymnastic apparatus, with the rifle, the dumb-bells, the balancing-pole, etc., according to the obstacles which are to be encountered, and the various stages of the training; example:

If the immobility of the whole child cannot be enforced at once, we may seat him before us, half mastering his legs between our knees, concentrate all our attention upon the hands, and eventually upon the one most affected. To accomplish our object we put the quietest hand on the corresponding knee, whilst we load the delinquent hand with a heavy dumb-bell. Useless to say that he does not take hold of it and tries to disengage his hand; but our fingers keep him so bound around the neck of the dumb-bell that he does not succeed. On the contrary, we take care to let the weight fall more on his hand than on ours; if he does not carry it, he supports it at least. Supporting the burden, the more he moves to remove it the more he feels it; and partly to escape the increase of the burden, partly by fatigue, his loaded hand becomes still; that stillness was precisely our object.

When we find that hand temporarily subdued, we relieve it from the dumb-bell, and venture to set it free opposite the other hand, and to maintain it motionless by the combined action of our voice, looks, and gesture. After a few such sessions of alternate loading and resting we generally succeed in keeping the hand quiet enough for the simplest employment; if not, by looking.

carefully, we will find that the remaining impediment to the usefulness of the limb lies in some extra delicacy of the sense of touch, which happily may be blunted by the use of the balancing-pole and a series of exercises of resistance ; but this is part of the sensorial training. The case presented here is one in which partial immobility was the prominent aim ; conversely in another case, immobility shall be secondary, and movement the principal object, as when we keep the whole body quite motionless to concentrate the attention upon delicate exercises of a single part. But we cannot forget that our final object is to teach complete immobility ; and to come to it no pains, no time must be spared, because our reward will be the harmony and usefulness of all the subsequent movements.

As immobility is in nature the fulcrum of movement, so in our training it will precede and close every exercise, and serve as transition and as repose between the various modes of active training ; so, at this very juncture, the child will be submitted simultaneously to passive exercises, to intrinsic and relative immobility and to movements necessary to learn walking, all of them transitions and reposes coming alternately.

If we take the child so low that he cannot and will not move, seated like an inert mass upon his chair, we must move him ourselves. To that effect we employ instruments of passive exercise, which act on activity nearly like personal impulses. The legs do not bend, we make them yield under the elasticity of a baby-jumper ; the feet do not come forward for the walk, let them encounter with the regularity of a walk a spring-board, which

receives and sends them back like an intelligent, indefatigable ground would do. Kneading the muscles, handling the articulations, moving with the floor of a treadmill, and like appliances, will give the pupil the muscular strength to walk; but he will not walk yet, and we make him resume in immobility the seated posture a little longer.

But, after all our passive exercises, he cannot yet stand erect and ready for a walk on a level floor. Then we raise him on two blocks or steps as narrow as his feet, and even we let him fall, being at hand to prevent an injury, but not to blunt the emotion, and to restore him, if needed, to his up-isolation. There he must stand, and stand firmly too, having to react with an energy unknown to himself against the vacuum around, which invites him to a fall. To resist the attraction of the void, he must strain his muscles in readiness for any emergency; he is anxious, he does not know exactly why, nor what to do, nor what not to do; but his strength is gathered, and if we have in front of him some other steps, and if we help him a little with our hand or finger at first, he will try, in the prospect of escaping the isolation, to pass one foot on the next step, on another, and on another, anxious, crying, but walking in fact for the first time. Left on a floor, he would have slid his feet very likely, but not walked all his life. He walks now, but with a swinging of the body, owing to the incapacity of the hands.

Prior to any education, the hands hang like impediments, if not brandished upwards by automatism, im-

pressing their disharmony upon the rest of the body. This being almost always the case with our children, we cannot improve their walk or station without improving the hands and arms, at least as instruments of equilibrium. Here, once more, we must do two things at a time if we want to succeed in one. This improvement of the hands and arms, as adjuvants to the general equilibrium of the body, is accomplished by the exercises which improve them for their direct functions, and which will be treated of hereafter. When this is done, we have brought these organs to the fulfilment of their simplest functions, and we are now called to bring the function to the point where it becomes a capacity, being governed by comparisons and reasonings.

When both walk and equilibrium are acquired, but imperfectly, the movements of progression are yet found counteracted by lateral swinging, which gives to the walk of an idiot its peculiar character; this is the point where we find the majority of them; this is the walk which bespeaks idiocy; this betraying incapacity deserves and costs a good deal of attention. The walk of the legs and the equilibrium through the arms have to undergo corrections alternately, alone and together; one first and foremost to-day, the other preëminently to-morrow. Here two kinds of exercises are indicated: first, those which bear upon the legs, and those that bear upon the arms; secondly, those that harmonize the complete functions. Among the first acting on the legs are the stairs of various grades, and the horizontal ladder, between the rounds of which the child has to walk. Acting on the

arms are the dumb-bells, the Swedish or other clubs, and the various extensions of the arm, which is of itself a natural balancing-pole. The second is composed of the aggregation on a small space, like a room or a piece of shaded turf, of all the planes, horizontal, inclined in the four directions, abruptly cut, rough, stony, slippery, narrow, etc., which could present themselves as ordinary impediments to regular progression. The child must go through these difficulties with or without dumb-bells, steadily commanded, or urged by the excitement of music.

Besides, rooms are to be extemporaneously prepared, in which we have foot-prints or forms spread on the floor; some near, some far apart; some with the point turned in, and some out; winding in some unexpected way, that the child has to follow, covering exactly with his feet the forms spread before him. The act of directing each foot on each form is one of the best exercises for limbs which have previously escaped all control; but what a superior exercise it is for the head above, which has never suspected its regulating power: to walk among so many difficulties is to think.

A child has to go through many impediments of the kind, some easy enough, some difficult to overcome, representing not only to the legs, but to the mind, so many intellectual problems, so that to go through this series of obstacles, is to go through a complete practical treatise on the physiology of walking and standing. When the pupil has overcome individually these difficulties, with all his attention helped by all the energy of the teacher,

he may be allowed to repeat these lessons, but not by memory alone. He is to be thrown in a stream of children who execute the same exercises on a large scale, with the excitement of example and music; and the previous tears are dried, tumbles are laughed at, torpor disappears before emulation, timorousness before charming little braveries; the first rays of promise have pierced through the darkness of idiocy. These children could not move of late, and to-day they are in their first well-earned perspiration; do not let them catch cold, particularly in the moral sense.

Now our pupil can stand, walk, and move, to a certain extent in conformity with the physiology of his organs, provided he is willing to do it. But no; he does these things when compelled or bidden, and almost never of his own impulse. Here, consequently, we see laid bare in him the antagonism between his negative or collapsed will, and the synergic will wherefrom all action derives. This part of the education is exposed in the moral training, and cannot be explained over each time that it is an adjuvant to any special exercise. Suffice it to say, that as long as his will fails him, our own will must take its place and carry him through walks and other performances of muscular activity.

To resume this period, all that belongs to the function of locomotion requires to be treated with the greatest attention, and subjected to the minutest analysis, as hardly second in importance to the functions of the upper extremity, for the steadiness of the foot is the basis of the steadiness of the body and of the accuracy of the hand.

The same care should precede and accompany our efforts at educating the latter.

When we come to consider the hand in idiots as an instrument of function, we are not more struck with its physiological disorders or deficiencies than with the almost universal anomalies of the organ; hands too short and clumsy, or spindle-shaped; fingers truncated, with unfinished nails, or thin and glossy, like quills, with pearly little nails; articulations so stiff that they can hardly be moved, or so loose that they cannot be fixed; tissues bloodless or darkened with stagnant blood; and there are so few exceptions to these extremes that we cannot avoid confessing the marvellous harmony of both physiological and organic disorders. This hand, stiff or relaxed, shaken with automatism or soaked in saliva, must be constantly present to our sight, as it will become henceforth an object of solicitude and study.

If any part of us challenges a definition it is the hand, its excellences being so many that a single definition cannot comprehend them all. The definition of De Blainville, "a compass with five branches," justly elicits the admiration of the geometrician; ours, not so dazzling, will come nearer to our object—the hand is the organ of prehension. Its incapacity puts a barrier between the idiot and everything to be acquired. Without further explanation, we will try to carry the hand from its incapacity in idiocy to its full capacity when improved by education. But this last view of the hand is too broad yet; and we shall be contented for the present with improving its powers only of prehension.

When we say prehension, we mean the complex action of taking, keeping, losing hold; otherwise, to seize, hold, and to let go: those three terms are the beginning, the object, and the end of the act of prehension. This act, so simple for us in its trilogy, is either impossible to, or incidentally performed by the idiot. It requires for its mere material accomplishment the concurrence of contractile nervous and willed functions. This concurrence, far above the understanding of many men, is certainly above the average ability of our pupils, who, far from entering willingly, as the occasion offers, into new contacts, find in themselves more energy to avoid than would be necessary to meet them. Considering the gravity of this infirmity, as shutting the being out from any intercourse and creating the most positive isolation, the task of teaching prehension can never be commenced too soon. Even the impossibility of standing on the feet must not be a cause to delay the improvement of the hands, since we see babies seize with their contracted fingers before they can use their feet to stand.

When the idiot cannot, or will not, use his hands, he is put in front of an inclined ladder, his feet on a round, his hands on another, which generally he will not grasp. Supposing the worst to be the case, the child's equilibrium is soon lost; he falls as low as the teacher thinks proper, since he has a good hold of him by the ring of his gymnastic belt. Then he replaces the child on the ladder and allows him again to fall, till the child, understanding better, and feeling where more comfort may be found, holds on with his hands. If he protracts his

resistance too long (and it goes too far if protracted farther than the time required to get acquainted with the various parts of the apparatus), a stop may be put to it by transferring the child to the perpendicular ladder, he being on one side, the teacher on the other, and a sufficient pressure exerted by the teacher's hands upon those of the child to prevent his throwing himself down, and to make him support his own weight.

When this, which cannot yet be called prehension, is accomplished without too much of struggle, the child is put behind the inclined ladder and made to grasp one of the highest rounds; his teacher standing in front of the same, presses his hands with his own to make sure that they will not let go. A reliable hold being had in this way, the teacher passes one foot behind the ladder, with which he pushes out the feet of the child from the round supporting them. Against this the child protests, and to diminish the pressure on his hands, tries to regain with his feet the lost round from which the teacher keeps them away; the more spirited is the contest, the more promising is the result.

Nevertheless, long before exhaustion could ensue, the teacher takes away one of his own hands, and passes it rapidly on the other side of the ladder where it finds the hand of the child loosened and moving about, not knowing what to do with itself. What to do, is to take hold of the next lower round. The hand is directed to it. This new hold is not as heavy as the first one, and offering a sort of security and repose, the child takes it; if not, some assistant holds his hand upon it, till the teacher

can secure it himself. Then the other hand of the teacher lets the other hand of the child go in the same manner, and makes it take a new and lower hold, in the way already described. So child and teacher descend slowly the ladder, the pressure of one supplying and teaching prehension to the other, the weight of the child behind, the direction of the teacher in front, the pressure on the hands above, the repulse of the feet below, and lower down the fear of a fall; such are the combined inducements to an early though unwilling prehension. Such and similar means will soon render a child capable of grasping at something, at least to prevent a fall.

This frightened grasp must be instantly used to take hold of, and carry things, for a less instinctive purpose; because when a function has been exercised for some time without object, the child has received from it an impression exclusive of any attribute and usage; it is not only for him a useless function, but one whose later intellectualization becomes next to impossible. For this practical consideration, as soon as a function begins to be accomplished mechanically, we set it in action for purposes and objects more and more intellectual, trying to leave no gap in the series of progress till the function is thoroughly elevated to the rank of a capacity. Now for the application of this principle to our present case. The child comes from behind the ladder where he began, under the uniform pressure of our hands, to exercise the same pressure with his own against the rounds, and to seize orprehend, without much knowing why, unless for fear of a fall. We study him after coming from that lad-

der ; he is seated, or standing, or sitting piteously enough, looking at his hands slightly bruised, and heated by the process they have gone through. Do we intend to leave him there under such an impression? If we do, he will present more resistance to our next trial, and will not be blamable for it; for so far, we have taught him less how toprehend with his hands than how much to apprehend with his mind instructed by the sight and touch, the next similar painful contact; in fact, we have created less positive power than negative resistance to the series of manual experiments in which he was entering. On the contrary, on taking our child down from the ladder we do not leave him time to look at his hands, but extending them horizontally, we put on each a bright apple. He, partly to feel the coolness on all the burning surfaces, partly not to let the apples fall, will contract his fingers and get a circular, equable, willed prehension of them; quite a progress on the passive contraction of the hands on the ladder's round. The apples are used when they can be had. In summer large balls of crystal would be cooler and more pleasant if possible. The fall of currants, grapes, or cherries in the hand would produce a similar derivation of feeling by contrast; circumstances dictate the choice of these means. As for the object; pleasure confirms the first consciousness of prehension gotten by force, and opens the organ to any unexpected perceptions; preparing the hand, so to speak, to think and to foresee for itself.

Now that we have obtained from the ladder the good it can give in the way of creating the grasp, and of

forcing to strenuous or lasting prehension, we may as well warn against its inconvenience when employed too long or too exclusively. If used to excess, it elevates or rounds the shoulders; it stiffens the joints, particularly the small ones; and unfits the hand for light and quick work. Therefore, to strengthen the prehensive power we must use, concurrently with the ladder, some other exercise, such as the balancing-pole, whose action is so rapid, and may be rendered quite energetic. But to react against any stiffness produced by the ladder, when the child comes from it, we must put him to some brisk exercise of the hands like those described farther on, to promote the faculty of imitation. From a heavy prehension, the child must pass to a light one; from a long one to a short one; and we must remember and apply the principle, to teach the prehension of bodies of every form and weight in its three modes—seizing, keeping hold of, and letting go.

The hand is to be trained for years in these abilities, not so much with extraordinary apparatuses as with things ordinarily used in daily life. This training transforms in due season part of formal prehension into easy handling. As this extension of ability of the hand comes little by little, its importance may be overlooked, and even its acquisition neglected; but this ignorant neglect would cost, after a while, an immense range of capacity; let us see.

We prehend everything about in the same manner, but we certainly handle everything in a special manner, a glass, an axe, a pen, a spade, etc.; prehension is more physical, handling more intellectual; prehendings done

passively has only one object, obedience; or done actively, is for the direct use of the child; but handling is, we may say, always a willed action having reference to things, to persons, to feelings, and to combinations of these innumerable.

As soon as an idiot begins to prehend and to handle, he must be made to work. When we impose this rule we know what obstacles are to be encountered. His hand is clumsy and weak yet, his movements have no regularity nor steadiness, his mind does not offer to the organ of execution any object worth doing, and what he begins under our orders he drops through unwillingness. Even when his will begins to harmonize with ours in any undertaking, his synergy is soon exhausted, and as a sign of his weakness we may see his forehead or hand becoming covered with heavy drops of perspiration at the beginning of a thought or of an action. This must not deter us from our final object; the more difficult it is, the sooner and the oftener must we go at it: the simplest work, the easiest and lightest thing done steadily by repetition or imitation, is better than nothing; the girl who begins to wipe the dishes, the boy who picks up the stones in the field, are above all helping to save themselves from the horrors of idiocy.

The hand is the best servant of man; the best instrument of work; the best translator of thoughts; the most skillful hand is yet, in respect to certain realizations, as it were idiotic; our own hand shrivels before we suspect the thousand of ideas which it might realize.

But teaching the idiot's hands to work is different from

commanding ordinary ones. The prehension and the easy handling of objects effect a few labors; a third element is to be introduced, the aggressive power of the hand over the substances to be worked—power whose use is entirely repugnant to the inoffensive nature of most idiots. This most important use of the hand, its aggressive capacity, is generally assisted by adjuvant instruments. It alters the surrounding bodies into likenesses of some ideal, which must preëxist in the mind; it consequently transmutes what is a mode of thinking into a mode of being; it works equally the ever similar wooden doll of the Crétin of the Alps, and the latest improvement in steam or electricity.

The hand displaces and combines objects by prehension; it acts on the surfaces as in polishing, drying, etc., by handling; it acts on the substances proper, as in carving, cutting, hammering, piercing, by aggression.

The practice of treating idiots will show what distance separates these works, what capacities each kind of labor requires; and particularly how the slow and difficult introduction of the child into the class of aggressive works will develop in him steadiness, will, and power, the very qualities most antagonistic to idiocy.

The necessity of working with the hand is urged even upon higher grounds than mere physical or intellectual advantages. Even things being otherwise equal (but things are far from being so, most of the time), the working man is, as such, superior to the idle one: idiots, in particular, are soon morally improved by working. Work every day is prescribed according to their ability,

here, once for all, no matter if its products be desultory.

The importance of this subject, conclusion of all the efforts at training the organs of movement, must not make us forget that we have left some anomalies unspoken of, and our few instruments of special gymnastics undescribed.

Shoulders rounded by dejection, crooked sternums, concave clavicles, narrow chests, vicious structures, diminishing the capacity of the lungs for respiration, or of the heart for circulation; curved spines, inequality of strength and structure of the two sides of the body, and similar offsprings of the incapacity of idiots for movement, are treated successfully with our gymnastic instruments, and particularly on the Back-board.

This board is ten inches wide, as long as convenient to stand inclined against a wall like a ladder, and armed with rounds which project laterally by pairs, ten inches apart; it looks like a centipede. The child lies with his back on the board, raises his arms to seize two rounds, and raises his feet from the ground to the first ones below. From this step he is enabled to reach with his hands higher rounds, coming up alternately with his feet, then with his hands, till these reach the top of the board. There he is allowed a little rest, as well to repose himself as to appreciate the novel mode of ascension, the distance from the soil, the look of everything seen for the first time from so high, and to be refreshed from past emotions, so that he can stand what will come next.

Next is the necessity of coming down. To that effect, we tell him to hold on well with his hands, or if we suspect any incapacity or unwillingness to do it, we send somebody up behind the board, whose hands shall press enough on his not to let him fall. At the same time we rapidly bring his two feet from their respective rounds to the centre of the board, slightly adducting the legs and extending the feet. This done with a sensible, not strong jerk, and bearing with a mathematical equality on both sides, we replace, if necessary, the spine on the vertical line, and every organ right and left of it, in their normal relations: no room for shortness, none for weakness; every part must bear its part, play its *rôle*, keep its place. Thus have we seen the most shocking differences between shoulders, deviations, already sensible of the spine, shortness of one limb, disappear under the uniform action of this equalizer, the Back-board.

The swing acting against a spring-board, that we have had occasion to mention as an instrument of passive exercise, becomes one of positive activity if a rope passed through a pulley be put in the hands of the child to pull himself with. We set him in motion, and he alone, or under our sight, or our immediate command, has to continue the motion by drawing on the rope. This apparatus, when properly built, and with the spring-board easily brought into different positions to suit different sized children; is made to be alternately an instrument of passive, or of spontaneous, or of continuous action for strengthening the arms, neck, spine, and legs. It is equally adapted to destroy some nervous sensibilities of

the hand, and more commonly of the foot. This latter organ in particular is sometimes so delicate as to avoid the slightest contact, and to refuse even to touch the floor to walk. The repeated push and repulse of the spring-board soon do away with these abnormal feelings. The foot recovers its firmness, and endurance of rude contacts: first qualities for the walk.

The ordinary swing is dangerous as a depressor of the nervous system, and consequently more greedily wished for by those children it injures the most. Ours differs in two essential elements from this; it has a point of contact on the spring-board, by which the motor powers of the child are constantly aroused, instead of being lulled into sleeping indolence; and it is set and kept in motion by the child himself, who exercises thus his chest and arms incessantly, instead of reclining in a useless posture. It is difficult to imagine two apparatuses of the same name and so nearly alike, yet so opposite in their physiological attainments, as the air-swing of the yards, and the spring-swing of the idiot gymnasium. The former gives lulling, enervating sensations; the latter brings on healthy contractions, and binds the unwilling to unavoidable activity. The dumb-bells are rarely used for idiots as for ordinary children, as instruments to give a momentum to an automatic balancing. Automatism in any form need not be favored in them; but dumb-bells are instrumental in many exercises, the purpose of which deserves at least a hasty notice.

They are used physiologically, as we have seen, to regulate the general equilibrium in station, immobility, walk,

jumps, going up and down stairs, etc. ; to bring their momentum to bear on the shorter or weaker lever when one side is different from the other ; to give regularity to irregular movements, and even to carry and absorb the automatic deviations of gestures into their normal movements ; to teach how to take hold and to let go ; to teach to obey commands with both sides or only one ; to impress the mind with the ponderable qualities of matter, each time they are taken and abandoned ; to realize through the muscles, by the same alternate burdening and discharging, the rapidity and reality of orders.

The dumb-bells act on the mind, as much as on the legs, spine, neck, shoulders, arms, and hands. We find bricks of greater advantage to strengthen the phalanges of the fingers, and to improve the grasp. A prolonged exercise with the dumb-bells is liable to stiffen the fingers, but they are handy for group exercises. Of late Swedish clubs have been substituted for them and do very well, besides their more showy appearance. In individual exercises they have no advantage over the dumb-bells ; in group exercises they make a different sight, and could not well be dispensed with, where introduced by way of variety and elegance. Moreover, these clubs are not as heavy as iron dumb-bells ; it is true that we have the latter of wood also. Nevertheless, "*abondance de bien ne nuit pas,*" and change pleases idiots as well as any of us.

To give the fingers nearly all their strong qualities, not the delicate ones, we use the Balancing-pole already mentioned, but not described. It is a round stick of hickory, three and a half to four feet long, armed at both

ends with wooden balls which render it very springy. It is thrown from our hands into those of the child, who sends it back, receives it again, and so on with progressive force and rapidity, from increased distances.

This is sooner said than done. The truth is, that some idiots offer to it a resistance next to insuperable; however, this exercise is of such importance, that the negation of the child has to make room for our will. If he runs away from the coming pole, we put his back to the wall, or his feet on two high steps; if his hands remain closed when the stick comes to them, somebody from behind has to hold them open, thumbs up, and to shut them when the stick is received. The same help is required to throw off the pole out of the hands which receive it unwillingly, and which do not want to throw it now. These helping hands which do the receiving and the sending, for and through the rebellious hands of the child, must be very delicate indeed to feel at each stroke how much of the child's action begins to take an instinctive or initiative part in their own action; and to calculate, consequently, how much of the next movement can be left to be accomplished by the spontaneous action of the child.

So the simple action of receiving and throwing a stick requires at first not only three pairs of hands to accomplish it, but is to be analyzed and divided into so many parts of actions, less and less from us, more and more from the child, that no language, descriptive or scientific, could give an idea of the many steps in this work, till he, half impatient, half knowing, throws the stick

with a willed jerk in advance of our help; then we have succeeded.

It will be unnecessary to describe again this exercise when speaking of it as the best gymnastic for a wandering sight. The need of following the stick in its forward and backward moves renders it especially useful when we want to educate the look. Its usefulness will be equally paramount when the hands, narrow-shaped, and the fingers, dry and glossy, can bear no contact but that of saliva or of a few things selected for their peculiar softness. It blunts the hyperæsthesia; under its action the hands soon resume their normal touch, and we shall be happy to find the balancing-pole again when treating the anomalies of the senses.

The application of these instruments of special gymnastics has brought us insensibly from the feet, legs, body, to shoulders, arms, wrists, hands, and finally to the extreme phalanges of the fingers, where lie in apparent confusion the powers of prehension and of feeling, of selection and of rejection.

When educating the hand toprehend and reject with the balancing-pole, we had occasion for the remark that this instrument was training the hand to rough, not to delicate contacts. The fact is, that unless unskilfully handled, it falls on the palms of the hands, whose muscular thickness is well fitted for its rough usage, whilst, if it falls on the pulp of the fingers, an exquisite pain indicates that this soft part is reserved for more delicate perceptions. This delicate tactile power shall hereafter be the subject of sensorial training; but presently the ex-

ercising of delicate prehension, in its three forms above explained, will close the actual series of special motility.

It seems that the smaller the organ, the more complex are its functions; at least the many ways of using the extremities of the hands, which are so complex in prehending, handling, modifying everything, justify this remark, and explain why more time, more care, more instruments, more ingenuities have to be spent during many years, with the sole object of giving skill to the fingers. We need not enumerate all the things which have been used for that purpose, but will point out a few of those which are truly physiological in their perfect adaptation to some deficient function of the hand.

The blocks shaped like dominoes, with their dimensions well defined, are laid superposed, combined together, to give firmness to the handling. Other blocks, like those used in building or other combinations, will do.

The nail-board is pierced with holes fitting exactly some nails that the child has to put in, then to take out, exercising his hand to precision.

The adaptation of geometrical figures to their respective hollow forms.

The raising, with the fingers from a smooth table, of collections of minute articles, such as beads, pins, thin paste-board, patterns, coins, wafers, etc.

The winding up of cords of various sizes, and the pulling of ropes.

The pressure on some mechanism to produce pleasant sounds or sights.

The buttoning and unbuttoning, lacing and unlacing;

the threading of beads, etc. These exercises, and many more such, are well calculated to adapt the child's fingers to every possible form, and to prepare them for every possible aggressive work on matter. But as this requires, besides the use of the hand, the interference of some leading sense, as the sight, a simple mention suffices here, as we shall have occasion to see these exercises soon in action elsewhere.

But, after all, the best gymnastics of the hands are drawn from the things held, handled, modified in the daily habits of common life; we said it at the beginning, we repeat it at our conclusion. Finishing where a treatise on gymnastics would begin, we turn again our attention to the point where we found our patients. They were affected with incapacities only, or with incapacities and disorders of motion and locomotion. Against these simple or double infirmities we have presented a series of advices, of means, and of apparatuses that experience has shown the most efficient. But in such matters the means and instruments are more easily remembered than the philosophy of their application; whilst that philosophy is the very thing which is above all not to be forgotten.

Therefore we must represent, that whatever instruments or means are employed, our starting-point to obtain movement was immobility; that through immobility, though imperfectly acquired, we have been enabled to pass our pupils through many progressive experiments; that the greater became their immobility the easier and farther they moved; that immobility has been the beginning of all lessons of movement, as it is the supporting point of

our own actions ; that the more steady is that immobility the more manly, resolute, and efficient is the action which, we would not say follows it, but we expressly say, takes its root in it ; that the kind of immobility impressed upon our patients every day, at every start, from their entering under our rule to their starting out for a new life, is the standard of our strength upon their weakness, of the reaction that our will creates upon their unwillingness in giving them a determination. That at each lesson, either if we teach an extension of the motive power, or are engaged in the painful duty of suppressing automatic movements, before every exercise we must concentrate their loose attitudes or stray gestures into compressed immobility: this is the beginning, this is the end of the muscular training.

So far we have tried to make our pupil learn to act and walk ; either by the passive process, somebody or something moving him ; or half actively, of himself doing that which he could not help doing under the permanent pressure of our command. But the passive or quasi-active process cannot last for ever, and the active one is very slow and intermittent. Between them nature has contrived an agency whose spring is magical for good or for evil ; it is neither entirely passive nor entirely active ; its initiation is passive, its performance is active ; its modes are prescribed, its execution voluntary ; and its performance admits of protracted reflex spontaneity—we have described the power of imitation.

As an instrument of training we consider imitation as personal, when it affects the person alone, or objective

when it affects objects. For instance, we raise an arm, the child does the same; that is personal imitation. But we take a book and set it upright on the table, the child does the same with another book; this is objective imitation. Everybody can understand that both of these are purely scholastic divisions, necessary to be kept in view for our practice, because each one initiates to different sorts of actions, and leads to different branches of acquirements and abilities. Otherwise, imitation is the power resulting from reflex spontaneity of repeating after others acts that we should not or could not have done of ourselves. It furnishes a motive to the millions of activities which have none primarily; it was the sole educator of the castes in the ages when the son had to imitate his father's doings to the end of the race; it is latent or patent, normal, endemic, or contagious: as seen in the Crusaders, the Flagellants, the Gold and Oil maniacs, etc. This power is in beasts as well as in man; the parrot has it for speech, the ape has it for gestures; we have it, too, physically confined in appearance, to the speech and gestures, but all our organs can and do imitate their similars in the measure of their physiological action. Children are known to cough, chew food, button their coats, walk, like their parents; imitation transmutes the particular accent of a few parents into a provincial dialect; it gives the Welsh, the Londoner, the Kentuckian, their individuality, and assimilates the *habitués* of Delmonico to those of Tortoni.

Personal imitation being a natural capacity in us, idiots or not, we must use it for the good of our children. Its

physical effects may be expressed as the correct and rapid reproduction of actions limited to the sensible functions of the body. Never too soon commenced, never too much practised, never too far extended in its physiological applications, Personal imitation will create precision and rapidity, as gymnastics have created strength and endurance.

Beginning even before the child can stand, if necessary, we seat him on a chair opposite us, and putting our hands in certain relations to our bodies, we invite him to do the same. That he does not do, and we do it for him, and keep his hands *in situ* long enough to make him feel that that is the point; and after a reasonable succession of failures he is to be placed in full view of a group of children smartly imitating movements monitored to them; this will do as initiation.

The movements of totality, as sitting, standing, kneeling, are to be followed by movements of parts, the head, one arm, or one leg; then come the movements of special organs—the lids, the lips, the tongue, the fingers, etc. These exercises will be concentrated upon the organs the most affected by mutism, automatism, chorea, etc. In this respect the hands will be treated as being affected with one of the greatest infirmities, the inability to prehend. And yet, notwithstanding the special adaptation of these exercises to the particular anomalies of each case, they must be, in every instance and at each sitting, merged into the largest mimical generalizations, constantly making the children realize that the smallest part as well as the whole body, may be called to answer the

summons of an external will now, and must be ready at any time. This wide-awakeness of the whole being to so many and so varied impulses, gives the child a standing entirely different from his primary attitude, and makes him sooner or later assume an intelligent countenance which is not hereafter defaced.

But if our exercises of personal imitation are curtailed to a few serial movements of the arms, caricaturing the gestures of the old telegraph, the children are certainly taught automatism instead of reflex spontaneity; the imperfect application of a principle is dangerous to its final realization.

In fulfilment of this vindication, Personal imitation, far from being the circular repetition of a few gestures, is the sudden, unexpected call into action of any organ that can be moved by the will. This is the broad ground of our training in education; but as the practice can make it more sensible, we will suppose and prepare a lesson given to a dozen children, with the double object of general and hand training.

Imitation is first induced by the concentrated operation of attention from the teacher to the child; individual influence requiring for its success silence, isolation, monotony of light, of color, of circumstances. But after any practical extension of the imitative faculty is acquired, this acquisition must be carried from the quiet closet prepared for individual imitation to the open room where group imitation displays its contagious power: there we are presently.

We put our children together according to the kind of

exercises to be done. If the imitation is to be alternately personal and objective, with dumb-bells, etc., we leave room between each of them, say four feet, in two or three rows. If the exercise is to require a good deal of attention from child to teacher, or need to be often interrupted by corrections and repetitions necessitated by individual failures, the children must be closely marshalled on a straight line, the teacher in front teaching, the silent assistant correcting wrong movements from behind the file. If the exercise is already quite familiar, and has for object, not so much the learning of new gestures, as the correction and more rapid performance of old ones, the children will be arranged on a slightly curved line, the more expert at the centre and extremities of the concavity, each of them seeing all the rest and the teacher; thus doubly impulsed and doubly taught.

The first attitude is upright immobility; without saying a word, we dictate with gestures the following attitudes: feet closed, feet open; forward the left foot, feet again closed. Raise the right knee, raise the left; a firm slap of the left hand upon it, and motionless. Some manœuvres of the left limbs; then eyes shut, and open. The two indices crossing each other; forward the right foot; arms crossed; down on the knees, up again with extended hands, first attitude—rest in immobility. Next we dictate more special positions. Face right, face left, hands raised, one foot forward, left hand out, both hands out, close the fists, open them, shut them again; extend indices, abut them, shut them. Down with the right thumb, up with the left, both flat on the closed hands.

Little fingers extended, indices also, abut the four, shut them all. All the fingers apart, all close together, indices apart from the other fingers, little ones the same; all open, all shut. Majors of both hands crossed at right angles, all the fingers of both hands *en cheveau-de-frise*, all shut in that attitude, separate them briskly. And many more combinations easier to find than to describe, closing by three cheers and three claps of the hands, for the pupils are now warmed, bright, tired, but not exhausted: final immobility.

There has not been a word, a syllable between us; imitation did all. It has attracted the sight, impressed the brain, contracted the muscles; slowly at first, more rapidly afterwards. The spark which directs a movement from our brain to our fingers, lights up its reflex action in the fingers; the work, tedious at first, grows faster and more pleasant, till there is between us a perfect current, superior to, if anything different from electricity: current of understanding between teacher and pupils, as rapid as any could be between exponents and auditors. These never-too-much-repeated exercises quicken the movements, improve the function of sight, extend the range of perceptions, give accuracy to the understanding, put all the parts of the body under the ready control of the will, prepare all the parts for the full exercise of their functions, educate the dead hand to living work; in these exercises above all, remember the hand.

This rapid description of group-training, which holds good in its general aspect for all sorts of groupings, must not make us forget by what slow process of individual

studies we have brought the children so far. But after months of alternate individual and group-training, in fatigue, often in despondency, we see them with joy, not only imitating the physiological exercises, but carrying their new powers of imitation into the habits of life; trying to eat, dress, stand as we do before them, proffering their services to weaker children, as we tendered ours to them; and finally doing by the influence of habit, what more gifted children do only under compulsion.

Imitation, confined to the parts of our own body, was naturally limited; but Objective imitation is nearly without limit. Objective imitation is the correct and rapid reproduction of actions affecting the relations or the sensible properties of objects. Its rationale is the same as that of the other kind; consequently it would be useless to give a formal demonstration of it here, since we shall have so many occasions of showing it in action. The fact is that henceforth, Personal and Objective imitation will be brought in constant request to give precision and quickness to the training in all its branches.

It has been intimated already more than once, that the foregoing treatment of the motive organs could not have been carried so far without being impeded by many difficulties, arising from imperfection of other functions not yet considered; among which are imperfect or abnormal sensations. In other words, defective sensations have necessarily interfered, more or less, between the child and the objects of the previous training. Now that the anomalies of the muscular functions have been mas-

tered, those of the senses present themselves as the foremost impediment to future progress.

It would be quick work to enumerate these anomalies, apposing to each the best means known to obviate it; but this would be better remembered than understood; and this method must be thoroughly comprehended, if we want it to continue to be perfected hereafter. To demonstrate it is a duty, founded upon the conviction that this physiological method has already rescued many idiots, and shall be, when improved, the basis of the education of mankind.

For our practical object, all the senses are considered as modifications of the tactile property, receivers of touch in various ways. In Audition, the sonorous waves *strike* the acoustic nerves; in Vision, the retina is *touched* by the image carried by the luminous rays assembled at the focus; the Taste and Smell are yet more proximate modifications. But this touch is only the initiatory part of the function of the sense; the impression is to be carried through the nerves to the special ganglia; and the sensorial ganglia, after perceiving it, send it to be registered in the Hemispheres. But this last step, comparison included, does not belong to the sensation proper; it follows the sensation, but not necessarily, since so many of our sensations are felt without being deemed worth reflection and registration.

Tactile sensation proper is characterized by the feeling of the touch, or perception; the seat of the touch is the peripheric extremities of the nerves; but the seat of the feeling is the ganglion, intermediate terminus of the afferent

nerves. Thence nerve fibres transmit the feeling to the hemispheres, and the efferent nerves transmit the will's orders to the peripheric organs of action. But the cerebral ganglia or hemispheres are not the seat of sensation. Their removal leaves a bird in a state of stupor, but it opens its eyes when it hears the report of a pistol, and then relapses into immobility; its sight is also retained, since it will sometimes fix its eyes on a particular object; and likely the perception of the other senses is retained, for it occasionally smoothes down its ruffled feathers, in which operation the sense of touch is involved.

On the other hand, that the sensorial ganglia are really the seat of sensation, is proven by the greater size of the one ganglion corresponding with the superior attainment of its function in each animal; as in man the relative outgrowth of the hemispheres above the sensorial ganglia is in proportion to the superiority of his imaginative and reasoning powers over his capacity of perception through the senses.

These relative differences explain the immense superiority of the intellectual faculties of man, and his inferiority to many animals in purely sensorial perceptibilities. These remarks identify the principle upon which our sensorial training shall be based—that sensations take place from the peripheric extremity of a nerve to its centripetal ganglion; the first receiving the shock, the second the impression of the shock, through the nervous conductors.

We find illustrations equally beautiful and distressing

of this analysis of sensations, when we compare an idiot whose eye cannot be struck by whatever image is presented to his blank sight, with another whose nerves transmit the impressions very slowly, and with another whose sensorium receives the impressions as defaced. This pathological analysis demonstrates equally well the point of the mechanism where the false image is formed in hallucination, and the process by which a slight, peculiar hesitation, previous to the utterance of speech, precedes by many months the confirmed symptoms of general paralysis.

But to limit ourselves closely to our subject, we insist upon this point, that the functions of the senses may be affected at their origin, along their course, at their centre, separately, or together. Let us state as a corollary, that the senses may be in themselves normal, yet left in the same state of impotence to perceive sensations, in which we have seen the motor organs incapable of moving, as if paralyzed, by mere deficiency of the will and of the intellectual synergy. This last incapacity may be more or less aggravated by sensorial ones.

From these observations, we shall be enabled to draw a few inferences that will have a practical bearing on the training of the senses.

We must make sure of the point or points where lies the deficiency of a nervous function. If it be at the origin, we must cultivate the point of entrance of contacts, open the doors, enlarge or straighten the windows through which the objects of our sensations may come in contact with the peripheric extremity of the apparatus.

If it be in the centripetal nerves, we must submit them to series of exercises of quickness borrowed from those of personal imitation ; gentle Faradization may do good in some instances. If the sensorial ganglia lack sensitiveness we provoke them to such alternate, abrupt feelings that these cannot fail to be perceived : we move and stimulate them by contrasts. If the senses, though correct, do not receive impressions because they are not lighted by comprehension, we must come down, down again till we find the object of our sensorial, or better qualified, intellectual teaching, among and next to the very lowest things that the child understands. And if the want of impression originates in the deficiency of the will, we must create a desire ; the thing desired shall stamp its impress on the awakened senses, and soon be looked for by the child. Practice alone can suggest the whole of the special rules of which the above are only generalizations.

But there is a principle in which culminates all the training of the functions, particularly of those of the senses ; principle, whose full comprehension or ignorance determines the issue of all our efforts. This principle is that each function of the life of relation is virtually, can and must be made effectively, identical with its faculty ; in other words, that each function is psycho-physiological.

This law, demonstrated in animals as well as in man, is not subject to exceptions even in idiocy. In the natural state animals elicit the highest degree of instinctive acuteness or even of comprehension from the use of their

most perfect senses ; but under the artificial training of schools and colleges the sensorial and intellectual developments of children appear quite disconnected, nay, are effectively rendered antagonistic ; the over-cultivation of one causing the drooping of the other ; the exclusive training of the function impairing the faculty, the exclusive training of the faculty atrophying the function. Contrarily to this practice we say, the exercise of each function must give rise to a corresponding exercise of the complementary faculty ; and at the present stage of this exposition we say more : Each sense must be taught as a function, and taught besides as a faculty.

The sense of touch being the most general, and in fact all the senses being mere modifications of it, we shall begin by it the training.

Although there is more than one sense in the touch, since there we find special nerves for pleasure and pain, cold and heat, pressure, etc., it does not behoove our subject to consider this sense under more than two of its aspects : one as a receiver of sensation constituting the touch proper, the other as seeker of sensations deserving the name of tact. By the first we perceive that we are touched by some body ; by the second, we seek for certain characters or properties of bodies. In the exercise of the former we are to a certain extent passive, ready or not to receive the coming impression ; in the exercise of the latter we are essentially ready and active. This does not constitute two senses, but two *modi operandi* of the same sense : the like remark obtains for the other senses ; and if we can conform our training to this *modus operandi* of nature,

we shall find our task of awakening the senses comparatively easy.

The Tactile function is the most important of our senses, as we have seen it the most general, and preceding all the others at birth. This sense is almost neglected in education, sadly abandoned in children to habits of dirtiness and depravity, and in women its disorders are intimately blended with those of hysteria, etc. In idiots the touch often does not send to the mind, or the mind does not receive from the touch its normal impressions; if it be not sickly and concentrated in one or two pleasing, repeated sensations, it is devoid of the ability of perceiving new ones, not wished by the mind. This sense in its passive and active moods is dull for all intellectual and practical purposes, and if exceptionally exalted is found governed by a few sickly susceptibilities.

If we examine the hand, moist with saliva, or in automatic agitation, and if we except the few peculiarities of delicacy above referred to, that hand gives scarcely any sign of feeling contacts; and decidedly far from desirous of using its tactile sense, tries to escape its exercise by all means. But if we take it after a series of prehensive and imitatory trainings as those described above, we find it moist with the gentle perspiration of labor, a little agitated by its previous actions, but quite ready for a new set of experiments.

These experiments will be of three kinds; one to cultivate the perception, one to transmit it, one to give the knowledge of it; and though these three operations are always more or less united, it will be easy to perceive

that the exercises may be calculated so that each one of these operations preëminates over the others, and we have only to make our choice in each series of exercise, according to the part of the whole function which needs the most of training.

When the peripheric termini of the nerves of touch are excitable or morbidly exquisite, we see the child avoiding normal contacts, and his organs left entirely a prey to the painful sensibilities of hyperæsthesia. Before doing anything to correct these perversions of the touch, let us look at their seat in the integuments, mostly in the hands. If they have not been levelled to the standard of working hands by previous gymnastics, they offer a curious assemblage of transparency, stiffness, and emaciation. Our duty here is imperative; at the same time that we give suppleness to the phalanges by passive exercises, we must hasten to cover the nervous termini with stronger epithelium by repeated friction against hard substances; anything which is rough enough is good enough for this purpose, as carrying bricks, turning coarse-handled cranks, spading, sawing, etc.

But when the external termini of the nerves of touch are dull or insensible, by looking at the hand we ascertain a softness of the articulations, an absence of prehension, a want of warmth and of circulation, greatly aggravated in winter. These signs of anæsthesia indicate another course of treatment; the objects of contact must not be rough, but substantial; this condition appeals for a full use of contractibility; at the same time the hand must be titillated with feathers as if it were for fun,

passed upon bodies of various degrees of polish or of resistance, as on a slab of marble, or on velvet, etc. It must be plunged alternately into cold and warm liquids, in agglomerations of bodies of different softness or elasticity, as bags filled with eider-down, shells, peas, flour, small shot, etc. The child, without the concurrence of the sight, must tell the difference between the contents of these bags by the sole impression of his touch, etc.

The occasions for the special trainings of the peripheric organs of touch are of frequent occurrence ; they being so often under and above the normal standard of sensibility.

Once we had a girl, seven years of age, much afflicted ; for, besides her idiocy, which was superficial, she could not stand on her weak legs. Her sensations of sight and hearing were good, those of smell and taste rather fastidious ; those of the tactile order, instead of being concentrated and intellectualized in the hands, were rather running wild through her frail crippled body, which could stand almost no contacts, or was seeking for those of an enervating order, making her a very nervous, tiresome, and often miserable child ; against this tactile infirmity, which was tending rapidly, in our judgment, towards a more specific nervous affection, we instituted a series of tactile experiments drawn from collections of everything that could be handled ; her eyes were shut, her hands ready, the things given to her and named by her, in a continuous and contrasting succession ; attention of the touch, that is to say, protracted tactile exercises, gave a new direction to her feelings, she became more quiet and

could use her once useless hands after a short time for ordinary purposes.

When the centripetal nerves are slow in accomplishing their action, the balancing-pole gives them quickness. To that end let us choose a light one, whose body is elastic, and send it into the hands of the child, who has to send it back to our hands extended in waiting for it: this is a fast game, in which the vibrations of the pole send their undulatory shocks, as the bow sends its to the fiddle through the strings; felt it must be; in token of which, the child who was at first sending the pole rather reluctantly, sends it back very soon with a sort of repulsive vigor, as if saying, "Too quick for me." True, the rapidity and number of vibrations thus sent and communicated to the slow organs is incredible, but the more efficacious.

The sensorial ganglia may be suspected of being the seat of the deficiency of sensibility when what remains of this is more dull than slow, and when the integument used in prehension and touch offers no particular anomaly. In these less promising cases we must not relinquish entirely our daily experiments of the touch, but ask from hygiene and medicine the help that they can give, if interrogated with discretion on constitutional matters.

From this point up, the doubt about the organ where lies the defect or the breach of communication, is not easy to resolve. Nevertheless, if one sensorial function alone be stopped, or decidedly more deficient than the others, we may surmise that the disconnection is in the special apparatus, or sensorial ganglion; but if all the

functions fail to transmit their impressions to the hemispheres, these intellectual organs may fairly be held accountable for the infirmity.

We have insisted upon these tests of the diagnosis as paramount to the treatment, because their analogue will be found in the study of other senses, and also because when we meet with similar obscurities, instead of treating actively all at once we know not what, we must keep the children under a simple treatment of observation. There, not being disturbed by much coaxing, exercised for their health and comfort, we have a chance to observe them; they have chances for attention, emotion, awakening of feelings: this too is treatment.

We need make no apology for introducing the taste and smell, after and almost as appendages to the touch, because they are the senses the nearest akin to it, and their treatment once disposed of here, we shall be at liberty to follow without interruption the education of the eye and ear as far as they will carry us into the intellectual training.

This remark does not imply that the taste and smell are gross material senses which have nothing to do with the intellect. Where we find them low and depraved, it is because they have been fed with vulgar, fastidious, or disgusting food, in the same way that reason is limited by ignorance, blighted by prejudice, distorted by sophistry. It is true, God has blessed with no taste or smell those who live in destitution, crowded among decaying animal and vegetable matters; but whenever the working masses are put in contact with elegant perfumes and

food, if it be only to produce them, they are improved and elevated by it. On the other hand, any excess in food or drink, or aromatics, is visited by disorders of function which react on the moral qualities. The use, we mean the normal use, of food and perfumes has a present and lasting influence on idiots.

Its present effect is to make them sensible to anything dirty, and desirous to avoid it, and to anything pleasant, and wishing to enjoy it. It forces the mind of the child to the exercise of many operations of comparison and judgment upon sensorial tastes and distastes, which could never take place in his brain at this present early stage of the training, upon matters pertaining to less sensorial and personal feelings. It is, besides, a guarantee against gluttony, the delicacy of the taste extending soon as far as to the comfort of the stomach.

As for the future, the cultivation of these senses determines always the general, and often the special tendencies of our pupils. Educated in the enjoyment of cleanliness, good food, sweet air, their general tendency is to shrink with horror at the contacts of the street, chance, and beggarly life which is the lot of many uneducated idiots and imbeciles; and to determine their aspirations towards better and higher walks of life. That special culture opens their laboring avocations in the way of some healthy, honest employment of their small abilities, by which they become gardeners, florists, and farm boys, instead of slaves of competitive labor in feudal, infectious factories.

We do not need to say much more, to show that the education of these senses is of the utmost importance,

even when being only dull, they are not found incapacitated by some peculiarity. Borrowing nearly always our studies from contrasts, rarely from similars, we must be careful to go far enough in the extremes of differences to make them felt, but not enough to blunt the nerves. There is a gamut in the scale of smell and taste as in the scale of sound ; it is not beneath our dignity to compose series of experiments to awaken the dull senses of idiots, as the florist combines his bouquets for enervating and other purposes, or the cook prepares his dishes for the satisfaction of delicate appetites.

For those unmoved by moral or artistic considerations, or even little sensible to the comfort or happiness that idiots certainly derive from the appreciation of good things, it will be necessary to present the training of the smell and of the taste, in its true relation to strictly intellectual and spontaneous faculties.

In the first place, in the blank condition of their mind, anything desired by the taste or smell, even the most vulgar, which can make an impression must be welcome, as the first object likely to exercise attention, and to be compared with the next. In the second, if the child does not care for anything but a few objects whose taste and smell we taught him to like and wish for ; well, there are our first levers, there are the characters of our drama, let them speak. A smell attracts the attention of the child ; his hand, which has never held anything, brings the perfumed flower to his nose, or oftener to his mouth, very frequent and curious confusion of the two senses ; let him do ; do not disturb this first intention, this first de-

sire followed by a voluntary action, and its rewarding pleasure, even if he eats the flower, instead of smelling it. But this is only the beginning.

The senses and delicacies have declared their affinities for each other. We cultivate the former, we select intelligently the latter; and here by satisfying, there by contrasting these appetites, we multiply the objects of comparison, we graduate the exercises of the child, and we always end a more sensorial, would-be vulgar exercise of the taste or smell by increasing the attention, the comparison, the desire and will of our pupil.

When he is familiar with a certain number of objects by the use of sense, those are spread out, and he is asked which he prefers, which he knows by name if he can speak; or if he does not speak, to select, or even to eat or smell those he likes best. Then depriving him momentarily of his sight, we present successively the objects to the tongue or nostrils, which must discriminate them without the help of the touch, sight, or hearing. When an idiot is brought to that point of attention, comparison, desire, once or twice a day for several weeks or months, for the satisfaction of this class of appetites, experience does not permit us to doubt that he soon can be attentive, reasoning, willing, about something else; we could sooner doubt that the yard-stick used to measure lace could measure calico; that the child who counts cherries, can soon count dollars; attention once fixed, is fixable; discrimination and will once acting upon one series of phenomena will act upon others, provided these new ones are natural, and presented in a physiological gradation.

Before entering into the treatment of audition, it is necessary to consider the anomalies of that function. The diagnosis of the various incapacities of the ear is difficult. The ear in man does not show its activity by external signs, as it does in some animals, nor even as much as does our eye. Some people seem to hear well though perfectly deaf, as when, through the vibrations of the floor, they follow the rhythm of music or the dance in measure; or when a deaf-born baby begins to understand and to use language as long as it lies on the vibrating chest of his nurse; but hears no more and speaks no more as soon as it is deprived of its contact with the resonant walls of this living musical instrument.

Hence, parents generally assert that their child was not born deaf, but became so precisely at the time when it was put down to crawl and walk. Hence J. R. Peireire concluded conversely that he could teach the perception and the reproduction of the speech by the touch; in which he succeeded so well that he communicated to his pupils even his own southern accent.

On the other hand, children may not hear because, not of organic, but of intellectual deafness. A celebrated surgeon once sent us as a deaf mute idiot, a child who could give no sign of hearing and was absolutely mute. We had seen with Itard several children intellectually deaf; and having ascertained that this one was sensible to a single noise produced by something he liked, we promised his parents that he could be made to hear, which he did inside of three months, and to speak, which he did inside of six. But in the majority of cases of apparent

deafness and mutism, we must be sparing of promises. One fine-looking idiotic girl, after years of apparent deafness, was taught to hear and comprehend the language very well; yet she remained mute, being prevented from speaking, even from crying, by local paralysis: showing that mutism cannot always be safely referred to either kind of deafness indicated above.

Besides the intellectual deafness caused by idiocy, alienation, ecstasy, and the organic deafness caused by defects in the organ of audition, there are several causes which interfere with speech in children, idiotic or not. These causes which complicate or aggravate idiocy are paralysis, of which we gave an example. Chorea, dyspnoea, an unsymmetrical arrangement of the maxillary bones, and teeth, vices of conformation of the larynx and tongue, and a high, ogival or funnel-shaped palate, etc.—accessory infirmities which require the help of medical, surgical, or mechanical skill. Leaving this to whom it belongs, we concentrate our efforts upon the intellectual deafness produced by idiocy.

This deafness and its consequent muteness is not always absolute; the children may hear a few words in a sentence, and speak in the same proportion; they may hear words uttered very near them, and they will speak or answer at the same distance—not farther; nevertheless, to embrace all the cases, we treat of intellectual deafness in its broadest acceptance.

The sense of hearing is put in activity by the stroke of atmospheric waves into the auditory apparatus. Its functions are hearing, auditing, listening, selecting, and

repelling sounds. We simply hear when a sound makes an impression without the help of attention; we audit when the organ is kept intellectually attentive; we listen when the sounds or their meaning being difficult to gather, the organ is kept in functional erethism by the will. The ear selects one sound among many, as when following the tick-tack of a watch among clocks beating the same measure, or the voice of the broker among the *melée* of cries at the stock-exchange, etc.; and the ear excludes altogether the impression of all sounds when our mind is deeply engaged otherwise. These two latter uses of the ear are acquired by experience in special circumstances; the first three are, for the sake of simplicity, reduced to two—the passive mode, or hearing, the active mode comprising auditing and listening, whose distinction is only incidental, though important.

The sounds, objects of our present studies, are noises, music, and speech. These three classes of sounds speak respectively, the noises to the wants, the music to the motive powers, the speech to the intellect.

From passive hearing to active audition and intense listening applied to these three classes of vibrating phenomena, there are many grades that are far from being gotten over by many children—even by most men; in this way we carry idiots as far as we can, and generally far enough for ordinary intellectual purposes.

The sounds of noises are like hieroglyphics of phenomena, meaning the thing producing the noise: one means pouring rain, another means the rushing of winds; one means sawing wood, another means the frying in the

pan which awakens the child's appetite. The wild boy educated by Itard did not hear the report of a pistol discharged behind his head, but heard the fall of a nut upon the floor. If water be poured from one vessel into another near an idiot apparently deaf, at a time when he is very thirsty, he will turn his head and go for a drink. What a field to awaken the attention and make the organ ready and sensible !

Music, if it has no special meaning for idiots, is competent, by the arrangement of its vibrations, to excite in them many unknown impulses ; hence music has more lasting and varied applications than noises in our treatment. Noises are more particularly taught to individuals separately, in isolation and in ambient silence ; music is employed more for groups in nearly all its applications, and they are many.

Music pleases the child without hurting him, a few exceptions reserved ; it gives rest from hard labor ; it causes in the immovable child a tremulousness of all the fibres, which is easily turned into incipency of action ; it prepares the nervous apparatus in a similar manner, awakens, quickens, and supports the thoughts wonderfully ; it derives anger, weariness, melancholy, and disposes to gentle feelings ; it is a moral sedative by excellence.

We hardly think it necessary to say that to produce these physiological effects, the music played before and with the concourse of idiots must be selected or composed expressly for their wants, their tastes, the necessities of their various circumstances.

The general characters of their music must be striking

contrasts, long silences after vivacious measures, etc. ; the morning airs beginning with the tunes corresponding to the natural dispositions of the children, modified by the brightness or dulness of the atmosphere, by the heat, thunder, rain, snow, and any particularity that affects the emotional powers. The tunes must carry them thence by a pleasing transition to the point of slight reflective excitement favorable to study ; the tunes played to concentrate the attention acting like a sedative to muscular exertion, and those relieving the mind from these bonds must express mirth or muscular vigor to disperse the children towards play-ground or gymnasium.

Preceding physical exercises, the strains shall be lively ; and when accompanying them shall affect, as nearly as possible, the measure of the actions commanded ; and when later, accompanying the exercises of human voices, the notes must come forth in long, prolonged tones, favoring the emission of the steady sounds of vowels or syllables. As for the artistic use of music, idiots are sensible to it. As a recreation, their taste is of the popular or colored kind ; they like lively, funny airs and songs, without being indifferent to impressive ones. Most of them like to be drowned in torrents of music, being soon carried away by the impulse of its vibrations ; and it does them good to be served often through the day with treats of harmony as with food, provided there be variety in the acoustic relishes.

The first teachings of music are not the product of any profound system, but the result of long, steady cultivation of habit. The child who does not care for, or does

not even hear music, is treated as if he loved it; and as there is plenty of it about the house, let him be struck by it. Only, as he is not sensible to it in ordinary conditions, we must create the conditions most favorable to prepare his senses for hearing. To that effect, when tunes are to be played, we put the intellectually deaf child near the piano, and if necessary at first, we let him support his hands, even his chest, against the instrument, which most weak or lazy children are willing to do sooner than to stand upright. When he is just settled in this posture the piano sends forth its strongest vibrations, then its sweetest tones, then comes a long silence, followed again by vibrations. This takes place in the midst of group teaching, with the incitement of the other children auditing and singing themselves. Contrarily, the next experiment for perceiving the sounds of music shall be made an individual exercise; the child kept in isolation, even in darkness, and music played at a distance, whence it comes unencumbered by the noise or movements of other children, will penetrate sooner or later into the blank organ. Surprise sounds, too, are tried occasionally to start up an unexpected sense of hearing.

As soon as the child shows signs of sensibility to music, these various experiments must be made pleasant enough to transform the simple function of hearing into the capacities of auditing and listening. One, auditing is developed by giving continuity to the tunes as if they were discoveries; the other, listening is created by breaking the continuity of the tune at its most interesting accent-

point where in language we place the mark of interrogation ; leaving the ear of the child hearing yet, and listening, as if thirsting for more.

But above all, and for our present object, the teaching of music must be soon blended in that of speech, and first of voice. The voice which sings emits vowels ; these vowels may be intoned by imitation to the diapason of the speech, and after a while supported by consonants. This transformation is brought on insensibly in the course of the musical training, and shall be more technically improved hereafter.

If we now look back, we can see that we began to use music to please, to attract instinctive attention, to give a passive vibration to the muscles and nerves preparatory to and during exercises. We have used music to give perspicuity and continuity to audition, and to support the organs of voice in learning to speak. Finally we shall find it intermingled with most of the exercises and habits of life of our pupils, as a happy, healthy stimulus. It was the most pleasing and unmeaning of our agents ; it has become the most useful, it has adapted itself to our deepest purposes.

When idiots cry we must remember that they are still children, some of them little infants. Many of them do not speak, they scarcely move, they have no other language than cries, no other gymnastic than the diaphragmatic spring-board upon which they exercise their vital organs in respiring and screaming. If we knew more, we should appreciate these voices, all significant of the wants, the love, the excitement of life reduced to its last

limits of inwardness. Consulting our own sensations, we could remember how the chest requires expansion, and how often we have yawned with loud sigh after protracted silence and immobility: we ought sometimes revert to our own physiological necessities when we are on the verge of impatience about physiological manifestations from children that we do not understand. The truth is about their cries, that besides their value as chest gymnastics, they are their sole alarm in danger or want, their sole means of social communication. But more, these cries are voices after all, they are the only beginning upon which we may be able to found the teaching of the speech; altering the cry into a medium voice, supporting that voice on successive consonants, and so on, preparing the materials of true speech out of the animal voice.

Before commencing to extract the speech out of the instinctive language of cries, we must take a good survey of the organs from the lips inwards; be sure that there are none of the physical or pathological defects mentioned above which must have been removed, if existing by this time. We may say the same of the moral incapacities of the child to which another part of this book is reserved; they demand all our attention previous to entering into the training of the speech. What we want is good-will on the part of the teacher and pupils, and a willed understanding between them. Such, with confidence and winning kindness, are the physical and moral elements to be insured before trying to teach a mute, or half-mute idiot to speak.

Our language being the representation by a combina

tion of sounds and articulations, of all the human impressions and spontaneities, it is manifest that the idiot must find it the act the most impossible and antipathetic to his nature; because it requires what he lacks most, the synergy of several faculties with several organs.

To make it sufficiently expressive upon idiots, we have to strengthen it with uncommon accent and emphasis, acting with words on the tympanum, in the same way as moral coercion acts on the mind. Besides, to teach the distinct perception of the voice, we must emit it from very near, and more than distinctly, contracting sound as well in volume as in pitch. And to teach the meaning of the words as representatives of entities, properties, actions or commands, the accents or emphasis will better mark their intellectual value than all possible commentaries. So that the exaggerated accent and emphasis, far from being a temporary expedient, will accompany all our teaching to its end in slow decreasing progression, except in a single case worth stating instantly.

We drop the accent when we want to command anything for which the child must make a choice of his own judgment. With this particular object in view, our speech to him must be of such evenness that not a syllable could influence him to follow our own idea instead of his free will; then the gestures and look must be as neutral as the language; more about this in the moral training.

The mechanical processes of speech are of two orders; one taught in the imitation-room from mimicry for the formation of articulation; the other we have seen borrowed from music for the training of the voice.

At the first lesson appointed for the beginning of articulation, the child is made to resume his morning and evening exercises of imitation without warning, explanation or ado; the movements are mostly concentrated in the hands, the hands brought about the face, the fingers put in and about the mouth. All the parts of the face are moved in correlation with the fingers, and the mimicry is effected with the double object, first: of giving the child an analytical survey by the touch, the sight, and the movement of the various parts involved in the act of speech, from without inwards; second, of making him execute silently after us the movements of the different parts employed in speaking. At this second stage of imitation, the hands have been withdrawn little by little, the teaching and the taught faces have come nearer, taken a better survey of each other, and their execution of mimicry has grown warmer, quicker, more correct. After this, all the organs of speech, the lips, tongue, etc., are moved freely in all directions, and in every manner; and once, as if by chance, in the middle of the mute, mimical exercises, the lips being well closed, we part them by thrusting out an emission of voice which pronounces *Ma* or *Pa*, it is just indifferent which. If the child's lips be soft, pale with confused delineations, *Ma* is the word; if the lips be red, firm, well-shaped, we begin with *Pa*. The same remark will rule the beginning of all the labial, lingual, dental, or guttural syllables; we are governed at first by the structure of the organs, but after choosing the easiest to be pronounced first by the pupils, we soon disregard them, and do not linger in the matters of routine, but advance every instant.

Often things do not go on so easily; particularly in joining the sound of vowels to the articulation of consonants. This difficulty is generally overcome by the musical exercises of the voice. Here music ceases to be a passive pleasure, and becomes the unpleasant, irresistible propulsor of the voice. This change must be made by an insensible transition; happily as we have had time to transform or concentrate gradually the imitative movements of the whole body into the imitative mimicry of the organs of speech, similarly we had the same opportunity of time and instruments for transforming the passive audition of music into its imitation by the voice. These imitations may be at first clumsy, short, accidental, rare even; let us enforce them more and more at the piano, with our own voice, by private efforts, in private groups, perseveringly exacting voices out of mutism, long sounds out of short ones, series of them after single emissions. The whole is done with the help of the piano or of other instruments supporting well the voice; and afterwards we again take hold of our good lever imitation, moving this time with it altogether voice and articulation, in isolation or in groups, for the emission of syllables simple, double, or compound, once, twice, or more times, with or without music, with or without formal command.

In this completion of the function it is of some importance which syllables are first taught. We present as foremost the two first indicated, *Ma* or *Pa*; they are the proper ones to commence with when the lips are in normal relations, and only remarkable, as we said, for their softness or firmness. But if, in their construction and

relation to each other there are anomalies, we would find it more rational to begin by other syllables. For instance when the upper lip is thick, and the lower one thin and short, abutting easier to the upper teeth than to the upper lip, the syllables *Va* and *Fa* will be proper. Some anomalies of structure or relation concerning the teeth, tongue, and palate, will offer other inducements to avoid and to select different syllables to begin with. Rarely the tongue moves easier than the lips; but if so, "*La*" or "*Da*," will present an advantage for a start. Where the organs are normal, the rule is to teach the syllables in the order in which they are emitted from the lips backwards, from the seen to the unseen organs. Otherwise, we must follow the indications of nature's own plan, the exceptional progression of the teaching, seeming fixed beforehand by the peculiar build of the parts.

Another rule is to commence the lessons with syllables beginning with a consonant, and to use those in which the vowel is inclosed between two consonants alternately with those in which two consonants precede the vowel, for fear the tongue should lapse into the habit of one of these pronunciations and refuse to emit the others. The syllables beginning by a vowel come later yet, as it is a great deal easier to say *Pa* than *Ap*, the first utterance being supported by the lips, the second by nothing. More in regard to the teaching of speech might be said, but as it becomes soon mingled with that of writing and reading, we will not anticipate here what we shall have to expose hereafter.

Enough to say that when we have followed any of these graduated categories for a certain length of time, we find them dangerous as creating routine, more particularly those favored by the peculiarities of structure above referred to; so that the series of exercises the most appropriate at the beginning must soon be avoided, and replaced by, and afterwards alternated with, their exact opposites. Finally, we must not forget that in the primary trials, doubling the syllables renders their pronunciation easier and more attractive; later, it would be an impediment to progress, and an incitement to stuttering: but at the start everything sounding like syllables is to be encouraged first, and corrected afterwards. Therefore all our primary rules here are nothing but transitory and transposable expedients, subject to the higher law of observation. So far we have spoken of the exercises of the speech only as individual, and forced by the strength of direct imitation; but as any one can surmise, the child has, for a long time previously, been made a witness to the exercises of the speech by groups, before he is made a participant in them. As soon as he gives certain signs of attention or tries to imitate speech, he is systematically exercised in it alone and in a group. At whatever point of the vocal teaching we are engaged, it is important to remember that speech is such a spontaneous faculty, that it is not enough to teach it, to produce it. The chances are that what the child learns to-day, he will not show at once; but occasion will bring it out later; or what the child learned and did not show in private teaching will appear when he shall take his part in the

group, and *vice versa*; and what private or group emission of voices cannot bring out, may flow from his lips without effort after some lazy looking on, and accidental hearing: we sow and nature fecundates.

We must conform our teaching to that physiological law of the production of voice as well as of everything spontaneous in man. At the time when we teach syllables or words with so much fatigue to ourselves and concentration to the child, we must not expect to see him using them in his own language; but as if he had learned nothing, he will continue to emit for his own use the bi-syllabic repetitions whose grammar is music. "*Ah-dé-dé*," shouts Edward in his joy; "*Ah-né-né*," repeats he in disappointment; ringing or nasal sounds which adapt themselves exactly to theories of philology, like the colors of a painter to a landscape. Our primary teaching must go through without touching this natural speech, taking care not to substitute Greek etymologies for those of passion, fearing to suppress in the speech of the child its higher element, spontaneity: justly afraid of our coming under the severe apostrophe of J. J. Rousseau, "Everything is well as it comes from the hand of the Creator, everything degenerates in the hands of man." If anything is divine in speech it is not grammaticism, it is the bounteous fluency, which flows like a stream from the soul.

For a long time we must be satisfied with this double progress, not always keeping pace with each other, of formal speech in the training, and informal language; later exercises and practice will tend to unite them.

We postponed until now an observation that the reader

has no doubt supplied; it is concerning the part to be attributed to the sight in the training of the speech. Sounds are taught by audition, but articulation is appreciated by the look; we had no opportunity to consider the functions of the eye so far, but we come to them presently.

The sight is the sensorial function by which we receive, through light, the impression of objects standing or coming in its range. This constitutes passive vision. Active vision or look, is the faculty of the same sense so very special and diversified from man to man, that two painters never reproduce, *i.e.* see the same object in the same light. But, to understand its grandeur and power, not in a Titian, a Cuvier, or a Schiller, but in our own selves, we have to compare the capacity of our sight with that of the same sense in some idiots. In them it is reduced to the sensibility of the retina to a few rays of light falling obliquely into the chamber of vision, nothing else seeming to be perceived but a dark obstacle. But what wonder! when our own mind is much concentrated, we do not see things actually passing before us, nearly striking us, no more than insane at some times and idiots ordinarily do. In most idiots the sight, without being so deeply anomalous, is much perverted in all its modes of perception or in one only; as when they see things, appreciate their number, their shape, their usage, and cannot discriminate their color. Idiots, even seeing quite accurately, seem to experience various difficulties in looking at, in directing, or concentrating their willed regard in some direction or at some distance; generally their look, when they have any, does not seem to go or stay where

they wish, and appears thrown at hap-hazard. The voluntary functions of this sense are always defective. They see, but look badly or accidentally, and use their sight only for hunting the things they crave for ; some even, when asked to look at something, shut their eyes firmly when trying to obey. In fact the sight is, of all our senses, the most intellectual, and the one whose anomalies are the most varied and the most connected with intellectual disorders in idiocy.

For these reasons, and on account of the help we borrow from the restoration of this function for all parts of the training, we must begin the education of the sight as soon as possible. But let us confess that if the diagnosis of the infirmities of the ear is more difficult than the distinction of those of the eye, the training of the eye presents more real obstacles than that of the ear. When the function of the sight, entirely involuntary, is reduced to serving a few instincts, and restricted to the reception of a few passing reflections of light or of brilliant objects, the task is difficult. When we taught the ear, more passive sense, we had only to send the sounds into the concha, and they entered, striking the tympanum, moving the nerves through the ossicula : we were acting and the passive organ was reacting. But the eye is an organ more active by its nature, inactive only in idiots by exception, and not easily coaxed to action. To make a child feel a body, we put it in his hand ; to make him smell another, we bring it to his nostrils ; to make him taste another, we place it in his mouth ; but to make the idiot see, when he turns his eyes away, or covers them with

his hands, or shuts them, or throws himself down when any object is presented to his sight, what shall we do?

No doubt the resistance to an intelligent use of the sight is not always so complete, violent, and obstinate; but even when it is of a more negative character, we find it insuperable enough in its milder forms, to bring home to us more than one discouragement.

Of all the things, if there be any, which can penetrate the glassy or tarnished eye of our pupil, it is our own look: the looks call for the look. We keep the child seated or standing, in front or close to us, alone, no noise, no company, not much of light nor of darkness; our feet ready to immobilize his feet, our knees his knees, our hands his head and arms. We search his eyes with our intense and persevering look—he tries to escape it; throws his body and limbs in every direction, screams and shuts his eyes. All this time we must be calm and prepared, correcting eccentric attitudes and plunging our sight into his eyes when he chances to open them. How long will it take to succeed? Days, weeks, or months; it depends upon the gravity of the case, upon the help received from the general training, and from other means of fixing the attention of the eye soon to be exposed. But the main instrument in fixing the regard is the regard. When this does succeed, as soon as our look has taken hold of his, the child, instead of taking cognizance of phenomena by the touch or smell, uses concurrently, and after a while exclusively, his newly acquired power. At that time the voice and commands will be better understood, and need not be uttered so loud, since besides hear-

ing, the child now looks at us, and understands also the meaning of our words by that of our physiognomy.

But there are many more means of fixing the sight. We need only present, as in a lump, those borrowed from private life, from necessities requiring more or less the concurrence of active sight; such as, if we displace and remove a little farther from the idiot, every day, the things ordinarily used by him and for which he was used to look with his hands. The dark room is made the theatre where light will appear at intervals; sometimes representing geometrical or other configurations, at other times simple bright fields for the exhibition of silhouettes, etc. The same room serves to exhibit fire-works on a small scale, and the kaleidoscope on a large one. This latter has more treasures of combinations of colors than imagination can conceive. If made of large size, motionless or moving by turns, single or composed of two cylinders revolving in opposite directions, or one moving, the other being fixed, it produces the most wonderful attraction for the sight; the Institution has no instrument for training superior to this. Now we take again the balancing-pole. It was used to create prehension and to do away with morbid sensibility of the fingers; in the present case it will serve as a monitor to the mind, as an urgent warning of impending encounter. If it reverberates smartly at first, the better it will call the attention of the child, and make him careful to look at the pole to appreciate when it comes, in what direction, at what rate, and how its unavoidable reception may be managed to save part at least of its hard contact. This exercise is no more a sinecure

for the eye than it was for the hand. By these and other means of the kind we accomplish our object of moving the look, steadying the regard, and deducing intellectual consequences from what is seen.

When we say that these means and their analogues succeed in giving an incipency to voluntary sight, we do not mean to convey the impression that it suffices unavoidably to touch the retina with our own sight or with wondrous lights, etc., to make the child begin to look as by miracle. No, we do not promise that; because this sudden result is the exception. More ordinarily the impression desired takes place slowly after series of experiments properly contrasted. In the more refractory cases, the direct individual exercises of the look are to be alternated with long standings among groups of working children, whose various modes of activity attract the attention of the lower idiot, if not in six months in three years. Then the use of the sight begins to be one of the elements of a progress very limited indeed, but not less striking than beneficial. There is scarcely one child as low as that in a hundred; and lower idiocy is aggravated by extensive paralysis or some rare forms of insanity.

When we have secured the use of this function, even to the smallest extent, that little must be instantly applied to some educational purpose with the help of other instruments adapted to the present incapacity of the child, to make him appreciate the properties of bodies, which otherwise fall naturally under the sight of ordinary persons. These properties to be perceived by the sight with

the help of special instruments are colors, forms, combinations of forms, dimensions, distances, plans, etc.

Colors are taught in the dark room with colored window-panes, as in the school at Syracuse, or with bodies of different or similar colors, assorting by pairs. Cards, ribbons, balls, marbles, samples of any sort of colored objects will answer, provided their similarity and dissimilarity can be incessantly referred to and tested. Balls and their receiving cups of the same color, and all sorts of contrivances of that kind for pairing colors, may be concurrently employed; care being taken that in trying to convey to the mind one property of these bodies, *i.e.*, the color, some other property of the instrument be not so prominent, its shape for instance, as to attract the whole attention of the child to the exclusion of the color; we have seen that occur. The familiarity with colors once acquired by these means is to be applied to things of daily use or enjoyment, such as wearing apparel, flowers, fruits, etc., care being taken to present mostly what is neat to the sight and pleasant to the mind.

Our appreciation of the shape of everything in nature has its foundation in the knowledge of a few typical forms to which we refer as matrices for comparison. The simplest of them are circles, squares, triangles, etc., adapting themselves to their corresponding forms and to no others. The child, by contrasting the differences, must find the similarity of these shapes. The same comparison must be established between solid forms and those only painted, and between these types and the objects of daily use, similarly if not identically shaped. The combination of

forms made up by the juxta or superposition of objects is well presented to the children by the blocks already employed, with which complex figures are built in plan or in elevation. Blocks near in form to dominoes can illustrate this kind of combination, and will give us an opportunity for graphic descriptions of some of the exercises of objective imitation that we have postponed to describe, but which we employ so profusely whenever we find it convenient.

The child being in front of the teacher, a table between them, a few blocks piled near their right hands, the teacher takes one, puts it flat before him on the table, and makes the child do the same. The T. puts his block in various positions relatively to the table and to himself, and shows, not directs, the C. to do the same. The T. puts two blocks in particular relative positions, and the C. does the same each time. What was done with two blocks is done with three, with four, with more, in succession, till the exercise of simple imitation becomes quite intellectual, requiring at least a good deal of attention and power of combination. Later, the T. creates combinations of two or more blocks at once, and the C. must imitate all of it at once; and finally the T. creates a combination of a few blocks, destroys it, and orders the C. to build up the like, whose pattern he now can find only in his mind.

To relieve the tension unavoidable in these exercises, it is well to close them by the building on the same principle of walls, towers, and other easy fabrics on a large scale, at which groups of children will work with eagerness; and whose sudden downfall will cause a happy

excitement. Once in the Pennsylvania Training-School for Idiots at Germantown, we were studying the case of a child who could not be induced to move. The matter with him was not paralysis nor weakness, but extreme apprehension of any contacts to be encountered by displacing himself. We left him standing on a spot, when his friends began to build one of their high towers of blocks around him; he was our prisoner. A little dismayed but unmoved, he would have stayed there till doomsday if we had not taken his hand through the blocks and marched him out of the ruins to the delight of his fellows. He alone was not laughing. But we ordered the same thing to be done with other children, then with him again; soon he understood the game, took mildly, according to his nature, his share in the burst of joy, broke through the building of his own slow impulse, and even soon helped in the erection of new ones. Dating from that event, he certainly became more confident and more deliberate in his movements and actions.

The Size of bodies is appreciated by measurement; and this effected by the sight, by the hand, and by special instruments. The measurement by sight is our present object, and its application to one of the three dimensions will sufficiently show how it applies to the others. Dealing with objects already known, which do not need description, we use at first the French *Mètre*, whose divisions into tenths are rather more sensible than those of the yard. Next to a stick one *mètre* long and divided on each surface into ten *decimètres*, we put another nine *decimètres* long and equally marked, another eight,

another seven, till the smallest, which is only one decimètre in length. After commencing the comparison with two sticks, the longest and shortest, we soon mix them all together on the floor or on a table, we call for them from the smallest up, or from the longest down, and the child must choose them, guided by his sight alone, and range them in order according to their size, verifying only by the touch what he learned by the look. What he can do with the mètre we try with the yard, whose divisions into inches or two inches will task more closely the compass of his vision. Nevertheless, we are ourselves sometimes uncertain in our choice among so many sticks, when the child is not. Few old men have been taught to appreciate this knowledge. Where this has been recently introduced into public schools from the idiot schools, it is not certain that it has been presented more physiologically than the exercises of personal imitation.

The notion of Distance takes its rank here, but only in its elementary form. When we want a child to appreciate spaces, we separate things of the same kind—books, for instance; we place them at different distances from each other, and we make the child do the same; first by imitation, next by command. When distances are to be measured in a room, from point to point, from person to person, or things, the child being the fixed branch of the compass of measurement, the distant object or point is the moving extremity of the same instrument. When this abstract instrument of measure works well at short distances, in a medium where the points of repair are familiar, such as the window, the mantel-piece, etc., we transport

it into the open air, taking for our points of repair the nearest trees, houses, fences, etc.

Of all the properties perceivable by the sight, those of the Plane are the most difficult to acquire, but the most necessary in education and practical life. On a knowledge of the properties of the plane depends our successful walk or fall, the erection of any structure, the relative situation of the lines forming drawing and writing, the delineation of all representations of objects by carving; cutting, modelling, casting, and endless varieties of modes of expressing a meaning by lines on surfaces; those lines idealize matter. It will not be, therefore, a loss of time, if we take great trouble in giving the idiot as clear an idea as we can of the plane in its relations to human work.

When a child cannot understand a plane, such as the floor or a table, we know it because he will try to put up things—ten-pins, for instance, in a variety of oblique attitudes, more or less distant from the vertical. This error is to be corrected by letting down a succession of plummets falling vertically on the floor or table, between which the child soon finds the vertical for the pins. Planes, level or undulated, are to be made by the hand, spade, spoon, or roller, on sand, to the great delight of the children. The plane for writing or drawing is studied by putting wafers on various points of a circumscribed plane, and letting the child do the same on another; marking and re-marking exactly the centre, the corners, and other prominent points of the surface. We come nearer to the idea of the plane by touching with our index finger, every prominent point of a limited plane, such as a slate; the

child doing like us. When he begins to succeed in this sight-exercise, we put a pencil in his hand, we take one in ours, and we begin to draw slowly and distinctly a well marked line from one point of the slate to another—say from the top to the bottom. This he does also, with many peculiarities of weakness and deviation. He has acquired the virtual capacity to draw lines, but he has not yet the synergy. In this respect, the difference between idiots is immense. One can lift a weight of fifty pounds who cannot hold and direct a pen; another can work all the day in the field without great fatigue, who can scarcely read nor trace a faint line on the black-board without showing unmistakable signs of exhaustion. We have seen a child, otherwise active, spend several minutes in tracing down a vertical line with chalk; the line was scarcely visible, though he was helping his right hand with his left with all his might; both hands became so exhausted that they were pearly with perspiration.

The deperdition of force, not by the straining quality of the work accomplished, but by the intensity of will employed, shown in these cases, cannot be considered as peculiar to idiots, but only as extreme in some. A teacher of Freedmen in Tennessee, writes to our esteemed friend, the Rev. Samuel May, of one of her pupils, a very intelligent colored blacksmith, that three evenings after he began to learn his letters, he could read correctly three pages in a "Wilson's Reader;" "but," says she, "the sweat ran off his face as if he were working over his anvil." This is enough to show conclusively that we must not calculate the abnormal by the normal innerva-

tion ; and that we are to measure the strength of idiots in particular, not by our standard of fatigue, but by the special condition of waste of their synergy.

To recommend this almost maternal attention for our children, we have left them very nearly drawing, that is to say, knowing how to do it, trying to do it, and yet unable by want of nervous power. We are now in presence of a nervous difficulty, which can be assimilated to some extent to the deficiency of contractibility which hindered our first exercises of prehension. As we then strengthened the muscles, we must now strengthen the nerves ; and as in the hand these two sets of organs are exceptionally numerous and delicately blended, if we can submit the hand to a series of exercises in which the muscles will be called into play subordinately, but enough to corroborate the nervous action of drafting, we shall succeed in giving to that function the power of expressing fluently and without faintness the meaning of the mind and the order of the will.

There is more than one way of modifying surfaces by drawing. If pen or pencil can express our meaning on surfaces, we may find other instruments that will produce other kinds of drawings. By them, new surfaces will be created expressive of meaning as well as the work of the pencil. Happily these modes of drafting, not at the surface, but into the very substance, by creating new edges or surfaces, necessitate the employment of a not inconsiderable proportion of muscular contractibility extremely favorable to the support of the nervous action, whenever this action is not entirely under the control of the will,

as at the outset of the training of idiots, and in the medical treatment of similar disorders.

This indication of supporting the failing nervous action by a certain degree of firmness in the prehension or in the grasp, is fulfilled by the following exercises. We give the children plastic substances, such as soft sealing-wax, clay, putty, etc., to shape into squares, rounds, or triangles, or in imitation of some familiar objects ; taking care, as everywhere else, to not repeat the same exercise till it becomes stupefying ; but on the contrary graduating it to favor, at the same time, mental and manual improvement.

We put into the hands of the child a piece of soft wood to be whittled to certain marks, where the new surfaces created by this action will represent some known form or objects. Soon we dispense with the marks on the rough wood, and give only a pattern to be copied ; and later we order such a form to be drawn from the mere idea our command impresses in his sensorium. To the knife succeeds the chisel, the hatchet, the straight or curved saw ; the hammer which plants nails in rows representing some delineations ; the pin doing the same work more delicately on paper ; the needle with colored thread drawing on white muslin nearly like a pencil, etc.

The scissors are among our favorite instruments. Patterns of card or wood are given, and their likeness cut out from rags or newspapers : firstly, by application of the pattern on the paper ; secondly, by the standing of the pattern in front of the child ; thirdly, by its mere presentation to the sight and withdrawal ; and fourthly, by the

nomination of the shape that is to be reproduced from the image evoked by the command.

It is very important not to confine these exercises to individual teaching any more than is necessary for their strict understanding. This understanding once acquired, must be carried into group exercises of two or three children at first, of many more afterwards, because when close attention is not so much needed, the healthy stimulus of competition must be taken advantage of. For every new progress to be made, we must give the child the advantage of concentration resulting from individual teaching; and for the confirmation of the same, give him the benefit of the expanded examples and incitements inherent to group teaching; the mind will be more bent on its object in the first, the hand will be freer and surer in the second.

There is no end to these exercises in drawing, which prepare the head as well as the hand for the realization of ideal types. When we consider that among men there is not one in a thousand who can use his hands to represent correctly a meaning, and that in a trade like tailoring or millinery, excellence of draft is scarcely the attribute of one in a hundred, we are astonished that the lessons of substantial drawing taught to idiots have not yet been carried into the public schools, where they could fill up the tedious intervals of book-learning. How many young women and men would like to exchange the knowledge of the height of the highest peaks on earth or moon against the skill of cutting in paper, or modelling in wax, the new ideas which daily die unshaped in their minds, for want of power of realization by their hands.

This ability to represent ideas by solid drafting is so natural to some idiots, that among them and among cretins are found excellent draftsmen, either in the general sense, or in some specialty. But without aiming at such superiority for the bulk of our children, we shall be contented if we can bring their hands to the point of expressing some simple ideas of form ; and even if only partially successful in this intellectual attainment, we have given to their hands the firmness and the precision necessary to draw and to write.

Then, and not before, we can put with confidence a pencil in the hand of our pupil, which he will seize like us, with the understanding and the will of making something come out of it by imitation at first. He puts his hand on the black-board armed with the chalk as we placé ours ; his eye looking at us and at the board alternately, as if asking for a command ; this is given. We trace a line, neat, straight, in a precise direction ; he does the same. We trace a second, a third, a fourth, he also ; he imitates all our movements ; the chalk in his fingers leaves the trace of these movements : that is the imitatory drawing on the part of the child. On our part, what must it be ? The successive production of simple, straight lines in combinations which imply simple relations between them ; relations which will soon give to this material imitation an intellectual meaning.

To this effect we create the lines, all but the first, which must be a horizontal or a vertical, in relation with others. For instance, a vertical line being laid, we start one, two, or three horizontal ones from it, sometimes from

right to left, sometimes from left to right. Parallels must always be supported in this wise ; and oblique lines cannot be taught before the two preceding are well executed to support the oblique at its extremities, forming a triangle ; and soon our pupil is unconsciously drawing quite complicated figures out of these connected straight lines. But before this exercise passes from the domain of attentive imitation to inattentive routine, we make two of these connected lines at once ; the child must do the same ; we make a combination of three lines, he must execute it similarly as a whole. After this we draw a combination of lines, we show it to the child, we efface it, and he must reproduce it by his sole power of imaginative memory.

At a certain stage of these exercises, which can be better appreciated in practice for each child than in theory for all of them, the knowledge of the curved line is to be introduced. This must take place when the straight one has acquired sufficient correctness to be above possible confusion. We teach the curve in various ways. As if it were nothing more than a harmonious deviation of the straight line, we support both ends of the former on the ends of the latter. We try to excite the perception of the undulations inherent to all curves by repeated examples of the same. When the child is called to draw curves, numerous copies of these lines are laid before his sight on the board, and under the appreciation of his touch in solid figures. But when the difficulty seems to rest more with the mechanism of drawing than with its understanding, we overcome that difficulty by making the child draw curves between two circles, traced or even solid, one inside of the other, five

or six inches apart, leaving between them a space for the child to wind up his curves like an endless thread. Considering ourself or the child like a compass, whose fixed branch is the body, whose movable branch is the arm, we and he soon trace within those two limiting circles perfect curves. Indeed, he succeeds so well that before long we have to put him to the practice of the straight lines again, for fear that he should curve after this every line he draws. When these two elements of drawing, the right and curved lines, are well understood separately, they are used in combination to produce an unlimited variety of figures, among which the representation of our letters has appeared more than once; so that the child writes already by imitation without suspecting it.

At this period the illimited and rather fantastic drawing by imitation is set aside, long enough to repress its unmeaning exuberance, but not enough to let the hand and sight forget their quickness at it. We set the child to draw letters after us, each letter as a whole, without analyzing its parts; and when he has written a number of them, we show to him the like printed, and name them, so that he could name them himself. After we have written, compared, and named a few groups of them in a certain order, we take care to use every ingenuity that our mind can suggest to vary that order, for fear that lazy memory should attach the idea or the name of the letters, not to their forms, but to the place they occupy. It is incredible how many ordinary children fall into that mistaken application of mnemotechny, caused by exaggerated reliance on localization.

Contrarily to school practice, and agreeably to nature, our letters are to be written before being read. But soon both exercises are mingled together, unless for some special object we effect a momentary separation, easily detected in the following exposition.

Our method proper of teaching writing and reading does not differ from what has been previously said; we take advantage here of differences, there of analogies, in form as well as in sound, to enforce the meaning of each by its correlative: in this respect our training is, not so much one of memory, as one of comparison. The instruments of the method are many. We have seen the best of all in operation; it is the hand, creating its own reading matter. But we shall use concurrently the following appliances, with others too numerous to mention.

We use two alphabets, one solid, the other printed; the first adapting itself to the shape of the second, the second on cards, easily placed or displaced, on a frame in columns, in groups, or scattered. The very lowest beginners when they have distinguished a circle from a square, can be put to this alphabet. We proceed in this wise:

The child is placed before our alphabet-board; we put before him the three letters *I*, *O*, *A*, in relief, and the same printed on cards are set in the board. We give him the solid *I*, at the same time that we name it, to be placed on the painted one. He may either let it drop, or put it on another printed letter, or put it on the proper letter, but improperly, or he may superpose it correctly, in which latter case the exercise is continued without in-

terruption. The failures above referred to are corrected : the first by making him pick up the dropped letter till he puts it down in its place rationally and willingly ; the second by ourselves covering severally each printed letter with its solid similar, to show him well the *modus operandi* ; the third by patiently correcting the wrong superpositions ; and better yet, by directing and teaching gently with our hands, his fingers to do that correction. At every movement of his or of ours, we have been naming with emphasis the letter moved. All the letters have been presented in series formed in view of apposing their difference and analogy of form ; as *I* to *O* by contrast ; *O* to *Q* by similarity, etc.

Without leaving to these actions and new impressions of difference and analogy of form, the time to be effaced, we change the order of the solid letters on the table, and of the printed ones on the board, and we ask him for the solid *O* ; which, being given by the child, we ourselves carefully superpose to the printed one. Then again changing the order of the two series of letters, we ask for *A*, for *D*, for *O*, again and again till he gives them without mistake. When the child is mute and not deaf, our teaching of reading cannot go farther. Otherwise, at this time we begin to point out one of the three letters ; he names it, and pairs it with its like. This is only passive reading, would suggest the critic. Yes, mostly or nearly so. But is not this quasi-passivity an improvement on not reading at all ; and cannot it be made the beginning of spontaneous reading ? That is the question. All our present training tends to that result.

There is no necessity of following this plan here farther than the letters ; nor of describing the various Reading-machines which may be found in all class-rooms, and are used once in a while when their peculiar ingenuity meets the peculiar difficulties of a case of idiocy. The alphabet above described would not itself deserve to be recollected if its virtue were limited to the teaching of reading. Its specific value resides in the power of giving accuracy to the sight ; its letters being presented by our method to this sense in all their relations of analogy and difference of shape, with this special object in view.!

The small cards, bearers of a single syllable or word ; the large cards showing whole series of the same, monosyllables in columns, or scattered in various orders, are more practical for reading. Those we used twenty-eight years ago could not be found anywhere, and were of our own manufacture ; images corresponding to them were printed expressly for our children by the kindness of a friend ; previous to 1840 there was no such thing that we were acquainted with. These cards have since spread everywhere ; and images for children are plenty, if not always appropriate to reading and representation lessons. Nevertheless since so many years the method and its means and instruments have progressed in skilful hands.

Confining ourselves at first to individual teaching, we use the small cards with a monosyllable or short word on each, as letters have been in our alphabet for passive lessons in the beginning, for active reading with speech as soon as we can, always observing the rule of changing frequently the order of situation, and nomination as well.

Exactly in the same manner, the teaching of polysyllabic words follows that of the monosyllabic ; this is the rational progression.

But, considering that the method of Jacotot, introduced into the United States by R. W. Emerson, and into the N. Y. State Asylum for Idiots by Dr. Wilbur, disregards the teaching of the alphabet as introductory to reading, and is in successful application in Syracuse, we would not have insisted upon the necessity of maintaining the old divisions were it not that their slowness in teaching to read does not impede nor diminish their importance as instruments of acuteness, to give precision to the sight. And as our fundamental object is not so much the teaching of one thing or of another, as the furtherance of each function and its utmost elevation in the rank of intellectual power, we have kept the old series of comparisons elicited from the letters and monosyllables as one of our best sensorial exercises. Otherwise, subsequently to the demonstration of the practice of Syracuse, reading is taught first as last by words. The word written is read, the word pronounced is written ; the speech flies like the thought, writing immobilizes and perpetuates both.

Before proceeding farther we resume the exercises involved in reading. Cries have been converted by music into voices ; articulation was derived from personal imitation concentrated in the organs of speech by mimicry ; speech was treated as a combination of voice and articulation enforced by wants ; writing was deduced from objective imitation ; reading was the result of the combination of both speech and writing ; letters are taught only

as a study of contrast and analogy between their shapes or between their sounds; reading begins by words, each word having a shape or configuration, a name, and a meaning: hence solidarity is established between writing, reading, speaking, and soon understanding; so that the learning of one of them carries with it the knowing of all. Written words are presented according to their difference or analogy of form; the teacher names them and the child points them out or writes them. Words pronounced by the teacher are written by the child; series of words are formed according to certain similarity or difference in their letters; other series are formed according to certain difference and analogy in their sounds when spoken. We said every word has a meaning; to write and to read implies the understanding of that meaning; everything short of it is an imposition by the teacher, or an infirmity of the pupil: let us remember this, since we shall presently begin to teach more especially reading proper.

Words such as *bread*, *apple*, *book*, are put on cards before the child, and read by us aloud. Their order is changed, they are read again, and the child is invited to put his index upon each word named. The order of the position of the words and of their nomination is altered at each turn, so that he can derive no remembrance from place nor series; but must receive his ideas from the word itself. When they are named, the very objects, bread, apple, and book, are placed on the table in presence of their printed or written names, and are pronounced also in this manner: 1st. We say "*bread*," he must show the bread and appose it to its written name. 2d. We show a piece of

bread, he must say "bread," and put the word bread on the piece. 3d. We show him the written name, he must show us the piece and give the name, etc.

When one of these three names is known, we put a new one in its place in that series, or we form entirely new series. When the object itself cannot be procured, its image will do even if imperfect; for it is wonderful how the power of imagining of children, even of idiots, soars above our feeble power of imagery. This juxtaposition or even identification of the three, four, or five forms of things, *i.e.*, their name written, printed, and pronounced, their images printed and carved, and their own selves in substance, such are the forcible instruments by which the first ideas may be forced through the senses into the mind. Thus let us open to our pupil, by reading, the possession of everything which comes within the range of his prehension and comprehension; nature is his book, and his fingers are the printers.

On this capital point let us acknowledge that we are too prone to continue farther than is necessary, the process of passive teaching required at the outset. We too often act or speak when the child might have acted or spoken himself if we had more insisted upon his doing it; given him a little time instead of hurrying; supported his hesitation instead of prompting him; and given no hint but a kind, encouraging look; this warning cannot be too strongly impressed, neither the next. This is against the teaching *per absurdum*, favorite with professors and transferred into the Institution by our teacher, unsuspecting its bad influence. She spreads before her pupil a dozen of

words on cards, and pointing with her finger to the word *mother*, for instance, if the child does not make it out and remains silent, she points to it again, saying, "What is that? Is it father?" and the child will very likely mutter the word *father*, to the great mortification of his teacher. But the apparent mischief is only a particle of the real one; the error is to be, and is corrected; the child will read the word *mother*; but who will give him back the trust that he had in his teacher previous to that false nomination? Henceforth, each time that she explains or affirms anything to him, he will look and listen suspiciously to know if there be not a snare where the good girl puts her most candid interpretation; distrust has sneaked in where confidence should have reigned; let us be candid with our simple children, if we want to teach them not reading alone, but truthfulness.

Next to this active, but close and attentive reading of the individual child, is the other, off-hand and rotatory, in which a written word passes from hand to hand, and is pronounced successively aloud. Though this is incontestably a reading lesson, it stimulates more the function of the voice to read aloud than that of the sight to read attentively. To make it effective it must go on rapidly, and emit by the stimulus of example a large volume of voices exciting one another; if well conducted, the children are particularly delighted with it.

Individual and group reading must be alternated, beginning with the first. Individual reading may be more insisted upon in cool, mild weather, and in the morning when attention causes no effort, and is not exhausted; on

stormy days and in the afternoon, dulness is prevented from settling down upon the class-room by group teachings: where a child alone would but express himself languidly, children will support each other in vocal action.

But in reading, as in all intellectual operations which take place immediately through the senses, we have to distinguish for the perfection of the teaching, the function from the faculty. This temporary analysis favors the development of the two aspects of the same capacity. By striving to give at the start correct perceptions through a sense, we insure correct impressions to the sensorium, impressions which will be the premises of sound judgment for the mind. What is called error, scarcely ever depends upon false conclusions of the intellect, but mostly on false premises gotten from incorrect perceptions; so that the faculty of judging is not so often the culprit, as is the function of observation: what is badly seen is wrongly judged of; and our future is too often the stake we pay for the error of our senses. It is nearly certain that the good, though limited common sense shown by the idiots educated since more than twenty years, must be to a great extent attributed to the particular pains taken to give them correct perceptions, and consequent ideas, through the physiological method, particularly in reading.

We come now to the subject-matter of reading. Though the subject of reading lessons must be of interest to the child, it must not be so familiar, except at the outset, as to lead him, by association, to the utterance of words not at the time before his eyes: for in this train

imagination, memory, or desire would substitute their objects to the reading matter.

On the other hand, the subject of the reading must not be too much above the comprehension and the habits of the mind to be taught, otherwise the lesson, besides its mechanical object, would proffer no stimulus, through curiosity, to intelligence.

But if it is difficult to choose reading-matter fitted to ordinary children's minds, how much more difficult it must be for idiots. Aware of this difficulty, in the first lessons in reading, we have been confining our teaching to persons, objects, and feelings strictly appreciable by the idiot. His reading has been one of nomination, whose series begins at the point of comprehension where we find him every morning, ending soon where he ceases to understand. Inside of that range, we make him nominate by writing, reading, and spontaneous appellation everything that he can comprehend; and we treat him, in respect to the identity of knowledge with nomination, as our first father was treated. "The Lord God formed every beast of the field, and every fowl of the air, and brought them unto Adam to see what he would call them; and whatsoever Adam called every living creature, that was the name thereof."—Genesis ii. 19. Therefore, *ab initio*, there has been no presentation of new objects, *i.e.*, discovery, without instant nomination; no nomination which was not simultaneous with discovery. In the same spirit of identity, whatsoever we name a new object, when first presenting it to an idiot, that is for him the name thereof. He had the perception of the object, we give him

its name ; and the correlation of both abides in his mind as identification of the image and name, elementary idea or notion.

Such is the teaching of nomination by writing, reading, and speaking, which has arrested us so long ; and which will be terminated when we shall know the name of everything that is, and is to be.

Trusting to the biblical narrative farther, we see that our parents were not instructed as to the qualities of things, but permitted to appreciate them all, except those of a single tree, of which they were forbidden to eat under penalty of death. Whatever has been the cost of their transgression, henceforth every generation, distrusting past experience, wants to appreciate the qualities of things with its own instruments of perception ; and observation, not trust, became the foundation of all Science. The idiot, if he can only move about, is no more ready to rest satisfied than his mother was. If we put a pippin or a crab-apple before him, tell him which is sweet and which is sour, he will not *know* it till he has bitten at both : that is Knowledge. At the present point of the training, we must take advantage of this natural instinct, and bend all our efforts to give accuracy to the appreciative capabilities of our pupil. The notion, or knowledge of identity of things, given with the name, like a baptism, suffices but an instant to human curiosity. The lowest idiot is not content with distinguishing a round or a square ; he wants to touch it, or lick it, to discover if it be besides rough or sweet ; in fact, if it has other qualities than those of shape. Can we shut our eyes to this lesson ; and must

we not try, after having taught the identification by nomination, to teach the appreciation of properties by a systematic study of qualities ?

The qualities to be studied mostly in reading, are of different orders. Those perceived in our previous gymnastics of the senses, particularly the pleasant ones, may be first employed, but not indulged in, longer than necessary to fashion the analytical power of the child. Contrarily, we reserve our absolute exclusion for the qualifications founded upon would-be science, and definitions more Greek than sensible. They abound in books written to spread the otherwise excellent system of object lessons. The definition of the horse reproduced by Dickens in "Hard Times," to show how idiots might be made in England and elsewhere, would correct this, if pedantry could be cured.

In object lessons, as practised for idiots since 1837, the intellectual and moral qualities and bearings have always been made prominent above the more physical properties of objects. This has been insisted upon in our books and practice for nearly thirty years, as elevating the character of the training and preparing the child for the moralities as well as for the materialities of life. After seeing how animals enjoy hours of nature's harmonies, who could name the brute which does not see in the grass anything more than food ; and after seeing the look of the calf at its mother, think that it loves her only for her milk ? Material education alone can make a child see only the "old man" in his father coming home with the provisions earned by his day's labor ; and the "old woman"

in the worn-out creature who has watched him by night, worked for him by day, till her heart alone is beautiful. He is not a teacher who cannot make the most material fact transude its morality, as the almond does its oil under intelligent and warm pressure. He is a teacher who cannot see a pod of peas without opening it by its spiritual articulation, letting out of it as much food for the mind of his children as there was in the body in the seven loaves and fishes.

If we insist so much upon the moral turn to be given to the part occupied by the system of object lessons, or qualification lessons in our method, we shall insist not the less upon our disavowing all paternity of this same system. We found it working in the hands of Itard. Pestalozzi applied it at the suggestion of Jean Paul Richter, who might have been its originator if he had not read of it in Rousseau. This is the simple truth about the origin of the object system which could not be found in the "Home and Colonial Schools" of England, nor in Oswego prior to its application at Bicêtre and Syracuse. In our estimation, founded upon personal practice, the object lesson, or to speak more correctly, the qualification lesson, derives its most important advantages from its degree of idealization. In the hands of teachers who feel nothing but matter, it is a very lowering instrument; in those of a teacher who loves to disengage an idea from its husk, it is an effulgent means of elevation. Who could tell the difference between the child taught to remember the names of the ultimate substances contained in a vegetable, and the one taught to produce it; or between one taught to produce it for the satisfaction of his own appetite, and another

doing the same for the support of children more destitute than himself.

One of the properties of things is to be in isolation or in collection; and in virtue of the law of contrast, it is impossible for us to feel with any of our senses any one thing alone: one is felt because some other thing is felt as being or not being next to it. The first notion of *ego* implies the existence of a *non ego*; these are complementary terms, numerically speaking, one and two. We cannot compare two terms without finding their comparison, third term which makes three; and from the binary and trinary combinations issue mathematics.

The greater number of idiots cannot count three, though among them, or more properly speaking among imbeciles, are found children wonderfully skilled in the mechanical arrangement of figures and in calculations of various sorts. This automatic genius does not belong to them as a class, nor imply in its rare possessors any susceptibility to general improvement. We teach idiots numeration with objects and qualities more than with figures; and cyphering with both; fractions in particular are all substantiated. But between the extreme of simpleton mathematicians and the majority of idiots who realize only very limited combinations of numbers, children are found whose idiocy being due to deficiency of perception more than of understanding proper, take in the course of their training a healthy mental growth, capable of being applied to many objects of learning, mathematics among others. These children are easily distinguished from puny prodigies by a general, not a

special adaptation of their newly acquired faculties. They were affected with extensive paralysis and contractures, or deprived from birth of steadiness of touch, or sight, or of hearing ; or simply they were arrested in their development by superficial idiocy. One of our pupils in the hospital of the "*Incurables*," in 1842, *M*——, and *Nattie* and *Willie* in the New York State Asylum, all three very degraded before admission, proved to be of that class. When the impediments to their perceptions were removed, their minds shone brightly, the more so if we take into account the effect of their incapacitation from infancy. These children are worse treated by their infirmities than others, because they seem conscious of the impediment which keeps them down. They deserve, if possible, more care and judicious training than any other class ; unfortunately it is too easy to leave them below the point of their natural aspirations, because the means of intellectual communication with them are difficult to establish and painful to sustain. On the other hand it is too tempting to develop in them, as in show-boys, the power of mathematics, of music, or of mechanics, to make them *stars* among the clouds of idiocy at the expense of the even and useful perfecting of their general capacity.

Concurrently with being made familiar with ideas of names, qualifications, and numbers, idiots need to receive a distinct idea of what actions mean. Men and things are constantly connected and disconnected by actions ; and we express these actions by verbs. If one child does not understand the meaning of the grammatical verb we can make him understand action by ours or his own. For

instance we have an idiot and an apple before us. We write the name of the child and the word apple on the black-board, leaving some room between the two words, and we put the child near enough to the apple to enable him to act in relation with it. Then we write between the two words the verb "take," and he takes the apple. We successively write, "let go," "roll," "raise," etc.; the child does with the apple all the actions indicated by these written and changing verbs. Then one idiot writes the verbs and another does the actions, always establishing all the possible associations between the subject and the object, by the interference of as many verbs as possible, and of as many children as we can, to render the exercise lively and active without confusion.

The circle of these actions is much extended as soon as the pupil is able to understand the relations established by prepositions. No illustrations could do it more felicitously than those engraved in Sadler's "*Pratique de la Langue Française*." This simple woodcut, expressing the relative situation of birds in connection with a cage, was pointed out to us by Dr. Wilbur as the best means of teaching the preposition to idiots, and we have no doubt that he has by this time realized, on a large scale, the miniature teaching of prepositions which pleased us so much in that book. To teach this part of speech in our old way, two appropriate words, written on the black-board, are connected with successive prepositions, each one expressing a relation that the child must establish, and which is written, as was done previously for the verb.

Pronouns are to be substituted for nouns, and articles for numbers as often as necessary to their comprehension. Participles are nothing but adjectives, and treated practically as such. Adverbs are another sort of adjectives applied to verbs. Interjections are taught practically by transferring to the black-board those which come out naturally from the chest. Interrogations are understood by being answered. In these matters the danger is not to teach too little, but too much; the want of comprehension being worse than absolute ignorance. We are, besides, under no obligation to go beyond the limits of elementary education. Even at the happy time when our children enter into the conventionalities of common life, and of primary or classical education, nothing compels us to follow them in their new career, but with our best wishes, and the founded expectation that ordinary teachers, for ordinary teaching, will prove more competent than ourselves.

Moreover, if we have done elevating the functions to the intellectual excellence of faculties, we have not yet finished educating the faculties as if they were simple functions. Accordingly, we mean for the present to call attention to the training of the two most general faculties—Memory and Imagination.

It is evident that whatever pains we take, and whatever method we employ to teach idiots, our lessons would leave but a fugitive impression without the help of memory. This faculty is limited, but not perverted, in idiots as it is in some bright children, who assert in good faith things which could never have happened. If idiots ever

told what was not true, it had been imposed upon their honesty; their lie was the earnest homage of their truthfulness. It is quite common to find among them memory restricted to some order of faculties, such as musical imitation, counting, mechanics. These one-sided idiots may be taught almost anything in the line of their favorite recollection, but nearly nothing else. Some of them, for instance, will learn from well-meaning but unthinking attendants, long pieces of poetry, the names of our Presidents, of all kingdoms, etc., whilst they cannot say a word of themselves, nor remember what they have eaten for dinner, nor answer a question otherwise than by repeating the final word of it; but among these diversities there is deficiency, no error. Consequently we have to develop here or there, more or less, but not to redress this faculty.

Previously, we have not instituted any special training for the development of memory; but in all our exercises, the introduction of the mnemotechnic element could easily be perceived; for we were constantly presenting and representing, comparing and reconsidering, inducing and deducing, impressing and provoking expressions; making sure, by all means, that the impressions were received with fecund associations; and also that besides leaving their mark in the sensorium, they might be evoked at any time when wanted. This was no memory by rote which brightens an exhibition, but was our steady support from one progress to another. Nevertheless, whatever may have been the stringency with which we enforced these incidental impressions and evocations, they

had not the pointedness of purpose which is necessary when we want to attain a special object, and which could only be obtained by special modes of training.

When we wish to cultivate the memory by some direct process, we must first choose the remembrance—matter most likely to please the child and to make an impression upon him; and secondly we must train the memory in its double aspect of perceiving and expressing the impressions: we must train both, at first, as if they were independent functions whose convergence produces later the complete faculty; as, truly, impressing and evoking past events or images are nothing else. We therefore bring the attention of the child to a class of facts or feelings in three circumstances—at the time when they take place, after they are accomplished, and at the time they are to represent themselves or to be reproduced by him. What he likes to eat, what he does with most pleasure, and by contrast what he dreads the most, are the proper objects of these first impressions: primary pabulum for recollection. We impress them by pairs, according to the association of feelings they may produce; later we graduate them according to progressions in ascending or descending series, a few or many at a time; we give a meaning to the formation of these series as well as to the simplest fact or image recollected; and we habituate the mind to remember, not for remembrance's sake, but in view of some end to be accomplished thereby. By all means, all that we present our child to treasure in his memory at this period, must be something which he will have to do again, or whose moral or orderly suggestions shall have a bearing on his future conduct. Memory in

this series becomes the inward monitor of actions, of daily habits, and of external life. In this line we must not be afraid to show some vulgarity. This order of recollections will bear on very low facts indeed. We have begun by asking our questions as if it were to the stomach; we interrogate the senses, and the lowest calls of Nature, if anything can be called low in her; we ask the feeling of cold, of pain, of fatigue; we put our questions to the quick; as when the hands nearly freeze, we ask what may keep them warm; the recollection of mittens or of a stove will suggest itself to the dullest mind. We insist particularly on leaving to the child strong memorial impressions of the value of time, money, food, fuel, clothing, light, home, labor; we make him tell and repeat all the associations of these powers, with his own comfort and duties, with the happiness or misery of others. We keep him informed of the changes which occur in these matters by law, recurrences, or accidents. This is taught in private or in group, alternately in action, and by actions when possible: children are so sensible to examples taken from among themselves.

After having brought this class of commonplace and daily recollections to the working point, till it begins to bear practically in the lives of the children, by governing their habits, we pass, if the growing intelligence of the pupil permit, as it generally does in due time, to a class of recollections, if not more useful, at least more elevated and far-reaching in their object. In the series we now leave theoretically behind, the retaining and combining of recollections was promoted by a natural desire of

comfort, of order, of recurrence—was, in fact, synchronous with our animal appetites. Instinct was the main lever of memory, producing regular habits, etc. In the series we are abstractly entering now, for the first time, the gregarious or social element has overstepped the limits of the instinct. The outside world has effected a lodgment in that skull once the domain of the solitary I. The intellectual faculties, strengthened by external accretion through the senses, are no more subservient, but command, and now exact from them the nutriment necessary to convert the physical into moral impressions, and to develop the sense of kindness, of justice, of the beautiful and their kindred. At this point memory looks so different from what it is in most animals, or in men unfortunate enough to be shut up in natural idiocy, or in artificial imbecility by ignorance and egotism; it is so elevated and so much of a generalizer; it is so potent to reproduce images, even of the abstract, with the vividness of creation, that its name is henceforth imagination.

Imagination, like primordial memory, evokes, and to some extent may repulse feelings or images; but by a kind dispensation the image of our pleasures is more vivid and more easily evoked than that of our pains. That imagination, not only of what is called the lowest order of phenomena, but of the highest intellectual cast and abstraction, is the result of comparison between true sensations, is evident. Men of the greatest imagination, like Homer and Milton, not only had observed immensely before their blindness, but that infirmity pre-

venting the formation of new sceneries, permitted them to reproduce with more exactitude and vividness than other poets the wonderful images painted behind their cecity. On the other hand, persons congenitally blind cannot form images of what can only be perceived by the sight, nor congenital deaf mutes have ideas of sonority. And idiots who are, in the proportion of their native infirmity, deprived of sensations like the blind or the deaf, are altogether in the same proportion incapable of memory or imagination; but as soon as, and as much as their senses begin to perceive, their mind begins to remember and to imagine. So the rule is, no ideas nor images without previous perception.

That idiots can be made to imagine as well as remember is proved by the rapid development and correctness, under a physiological training, of their aspirations for what is beautiful, right, and worth loving. It is imagination which teaches them to try to please us, because they see our face lighted with hope and faith in their progress. It is imagination which makes them try new contacts, to receive new impressions, and compare these to the old ones. It is imagination which impels even the low idiot, once under training, to share his cake with another child and to look intently, not at his mouth, but at his eye, to see in it the gleam of pleasure of which he wants his share as a reward. It is by favoring the creation and the recurrence of such impressions that intellectual wants are created. Soon the child's mind needs food as well as his body.

Considering the bearing of this part of the training, we

must, as early as possible, cultivate the formation and expression of images, commencing as low as necessary, as we did for memory proper. Here pictures, recitations, dialogues, and animated narratives find their place; adding forms to facts, colors to forms, movement to the whole. And as imagination is not complete, since receiving impressions it does not return them, the idiot must be made to express his impressions as soon as his face and pantomime testify that he has been impressed. Henceforth let him receive and send back the images; as in reading, the words; as in the gymnasium, the balancing-pole; double current, solidarity, which constitutes the I part of us.

If memory connects the past and the future in the present of a single individual, imagination connects the same with all the race and all time. In this way we conduct our children, some on the threshold, some on the proscenium, a few in the sanctuary of the unseen pantheon where everything which is, is as if it were not; and where everything which is no more, or is not yet, may be summoned into existence. From the feeling of pressure on the tactile organs which taught prehension, to our feelings of duty towards our pupils which taught them affection; from the distinction of the difference between a circle and a square, and that between affirmation and negation, or between right and wrong, we have followed a continuous path, beginning where the function awakes to the perception of simple notions, finishing where the faculties refuse to soar higher in the atmosphere of idealism.

Perception producing simple notion, faculty producing

ideas more and more complex and abstract, are the extreme terms of the chain, beginning at the peripheric extremity of the nerves, ending in the hemispheres. Perceptions are acquired by the mind through the senses, not by the senses. This is proved anew every time a new sense is created, or an old one improved by some discovery such as spectacles, telescopes, microscopes, algebra, compasses, electrometers, etc. It is not that artificial sense which perceives, it is the mind through it. In our case, every time we have improved, even sometimes nearly created, the modes of perception of idiots, their mind has begun to perceive phenomena through their new and improved senses; and we have been enabled to conduct those impressions to the centre where they become idealized. In this manner all the senses natural or artificial, physical or moral, are doors to the various passages leading into the focus of impressions wherefrom radiates all expression. To facilitate the study, we distinguished the notions from the ideas as if they were two products of different functions; but for the sake of truth we leave them both what they are, the incipency and the conclusion of the operation of a single function; the function of reflecting all we can of the world into our microcosm.

Thus education connects a small body with all bodies, a small intellect with the general laws of the universe, through specific instruments of perception.

This being the law of perception of phenomena, it does not matter through which sense we perceive; the same operation being entirely from the mind, is always identi-

cal with itself; this law is nothing less than the principle of our physiological method of education.

Thence the law of evolution of the function of the senses ending in intellectual faculty, rules from the youngest child to the most encyclopædic nervous apparatus. A corollary law to this, is the mode of perception and idealization of the impressions according to certain conditions, conformable to the teachings of anatomy and physiology. One thing at a time, is the law of sensorial perception for inferior animals. As many things at a time as necessary to form a complete idea, is the law for the intellectual comprehension of man. In animals some senses are more perfect than in man, hence their sensations are more perfect than ours; nevertheless, theirs being received in singleness and registered without associations, cannot become ideas, because their notions acquired alone, live or die alone, incapable of fecundation; the lower animals are as far down as that.

But we cannot study the progress of sensorial and intellectual evolution without finding already animals inferior to mammalia which register their sensations and feelings in comparison with each other, and with a meaning attached to them. These animals must receive compared and comparable impressions, to be capable of combining them presently or hereafter, to form new judgments and determinations. The ant, the bee, the spider, the blue-fly and many more, give evidence of their power of idealizing notions, and of the rationality of their determinations. But for the immense majority of animals, the rule seems to be one perception at a time, whose isolated notion is

incapable of entering into collections of images, parents to ideas. Though every observation points to the probable issue of this difference between man and brutes, as being only a gradation, whose lowest strata begin lower than the corals, which know in what direction to build and propagate, and ends where man does not yet dare to aspire. However, few minds are prepared for this affirmation, unless it could be supported by the following observation :

In the nervous apparatus of animals, the sensory ganglia are larger than the hemispheres in proportion to the development of their respective functions ; sensorial perceptions being in them more extensive than the ideal products of comparison. On the contrary, in our human nervous system, the intellectual ganglia are larger than the sensorial ones in proportion to the predominance of the reflective and willed above the perceptive faculties.

The following remarks constitute the psychological corollary to this observation.

The motor of life in animals is mostly centripetal ; the motor of life in man is mostly centrifugal. But how many uneducated, or viciously educated men display none but the ferocious centripetal power of the beast : while a dog shall affront death to defend his master, that master may work the ruin of twenty families to satisfy a single brute appetite ; nevertheless, the motor in the beast is called instinct, in man soul. Well, we will say yes ; instinct when a wild, uneducated, or uneducable stock ; soul when engrafted by education and revelation. As a generality, however, animals have only a centripe-

tal or individual life; men, educated and participating in the incessant revelation, have a social and centrifugal existence also, being, feeling, thinking, in mankind, as mankind is, feels, and progresses in God. What can be done to a certain extent for brutes, may be done for idiots and their congeners; their life may be rendered more centrifugal, that is to say more social, by education.

True, this view of our subject and of our race would not deprive animals of some kind of soul. But our mind must have already become familiar with that sort of concessions; since women, Jews, peasants, Sudras, Parias, Indians, negroes, imbeciles, insane, idiots, are not now denied a soul, as they were once by religious or civil ordinances. Nations have perished by the over-educating of a few; mankind can be improved only by the elevation of the lowest through education and comfort, which substitute harmony to antagonism, and make all beings feel the unity of what circulates in all, life.

Contrarily to the teachings of various mythologies of the brain, and with the disadvantage of working against the prevalent anthropological formula, we were obliged at the same time to use most of its terms; we have developed our child, not like a duality, nor like a trinity, nor like an illimited poly-entity, but as nearly as we could like a unit. It is true that the unity of the physiological training could not be gone through without concessions to the language of the day, nor to necessities of analysis, quite repugnant to the principle; it is true that we have been speaking of muscular, nervous, or sensorial functions, as of things as distinct for us as muscles, nerves,

and bones are for the anatomist ; but after a long struggle with these difficulties, psycho-physiology vindicated its rights against the feebleness of our understanding, and the mincing of our vocabularies.

We looked at the rather immovable, or ungovernable mass called an idiot with the faith that where the appearance displayed nothing but ill-organized matter, there was nothing but ill-circumstanced animus. In answer to that conviction, when we educated the muscles, contractility responded to our bidding with a spark from volition ; we exercised severally the senses, but an impression could not be made on their would-be material nature, without the impression taking its rank among the accumulated idealities ; we were enlarging the chest, and new voices came out from it, expressing new ideas and feelings ; we strengthened the hand, and it became the realizer of ideal creations and labor ; we started imitation as a passive exercise, and it soon gave rise to all sorts of spontaneous actions ; we caused pain and pleasure to be felt through the skin or the palate, and the idiot, in answer, tried to please by the exhibition of his new moral qualities : in fact, we could not touch a fibre of his, without receiving back the vibration of his all-souled instrument.

In opposition to this testimony of the unity of our nature given by idiots, since they receive a physiological education, might be arrayed the testimony of millions of children artificially developed by dualistic or other antagonistic systems ; as millions of ox and horse teams testified to the powerlessness of steam. The fact that dualism is not in our nature but in our sufferings, is self-

evident. Average men who oppose everything, were compressed from birth in some kind of swaddling bands; those who abhor study were forced to it as to punishment; those who gormandize were starved; those who lie were brought to it by fear; those who hate labor have been reduced to work for others; those who covet were deprived: everywhere oppression creates the exogenous element of dualism. Of the two terms of "the house divided against itself," one is the right owner, the other is evidently the intruder. We have done away with the last in educating idiots, not by repression, which would have created it, but by ignoring it.

One of the earliest and most fatal antagonisms taught to a child is the forbidding of using his hands to ascertain the qualities of surrounding objects, of which his sight gives him but an imperfect notion, if it be not aided by the touch; and of breaking many things as well, to acquire the proper idea of solidity. The imbecility of parents in these matters has too often favored the growth of the evil spirit. The youngest child, when he begins to totter on his arched legs, goes about touching, handling, breaking everything. It is our duty to foster and direct that beautiful curiosity, to make it the regular channel for the acquisition of correct perceptions and tactile accuracy; as for breaking, it must be turned into the desire of preservation and the power of holding with the will; nothing is so simple, as the following example will demonstrate:

Once a very excitable child, eighteen months old, touching, breaking, throwing everything he could, seemed

really ready, if he had been once punished for it, to become possessed by the old intruder ; but it was not our plan. We bought unmatched *Sèvres* cups and Bohemia glasses, really splendid to look at, and served the child in one of them, after showing him the elegance of the pattern, the richness of the colors, everything which could please and attach him to the object. But he had no sooner drunk than he threw the glass away. Not a word was said, not a piece removed from where it fell ; but the next time he was thirsty, we brought him where the fragments lay, and let him feel more thirst before we could find another glass equally beautiful. Some more were broken in the same petulant spirit ; but later, he slowly dropped one, when, at the same time, he looked into our eyes to catch signs of anger. But there were none there, nor in the voice ; only the composure and accent of pity for the child who could willingly incur such a loss. Since then, baby took good care of his cups and glasses, finer than ours ; he taught his little fingers how to embrace with security the thin neck of one, the large body, or the diminutive handle of others. In practising these so varied handlings, his mind became saving and his hands a model of accuracy.

Now that the unity of our plan to connect all the functions and faculties in the unity of manhood, and into mankind, is fully exposed to view, we have only a few words to say about the unity of our apparently disconnected means and instruments of education.

Whatever we have been teaching, and whatever instruments and means we were employing for that object, our

method proper has been founded upon one principle, comparison. All our efforts at making the child perceive, were aimed at comparing; all his actions, comparisons; all our orders comparisons; all his experience, comparison. That this principle, which necessitates at least two terms to produce an idea, is the physiological principle of education, might be demonstrated by the success of those who taught, by it idiots otherwise uneducable. But as the retired institutions where these children are improved are not yet familiar to everybody, let us show, in the evidence given by ordinary children, that our method of physiological education is nature's own method of teaching mankind.

The new-born infant, suckling for the first time, is not satisfied by the breast that he cannot exhaust. Even so young, he does not live exclusively upon milk, but on knowledge too; for if we turn our eyes from the hand which helps his mouth in forcing out the milk, we see the other carefully studying with its two surfaces, not only the form of the opposite breast, but the deflections and distances between each; the firmness, elasticity, softness, and warmth of his new dominions; we see him following mostly, for the sake of accuracy, the convex curves with the palm, and the concave surfaces with the back of his hand. After a few days, he knows all about it, and being less eager for knowledge, he moves his hands only to receive pleasant contacts from the touch of his mother's skin, or to go farther in search of new discoveries among the silk, cotton, or woollen fabrics.

The little child, carried for the first time in a forest, is

no sooner on his feet among nature's productions, than he exclaims, "Oh, the big trees! Oh, the small flowers! Oh, the little, little insects!" passing again and again from the tree to the moss, from the insect to the tree, till the whole comparison is registered with all its attributes. If the child had seen these things individually, and not collectively with their differences, when forgetting the isolated impression of each, he would have lost all of them, and nothing more would be left; but having registered, with the perishable, isolated images, the ideas and feelings resulting from their comparison, it does not matter much if the isolated images of the things have since been defaced or not, the image may be gone, but the idea of it once impressed is felt to this day and for ever with all its consequences of sylvan tastes, rural tendencies, and sensibility to the language of the earth.

A boy had grown to the age of six without paying any attention to size among men; perhaps, because he and his kin were of small size. He knew generally that some men were taller than others, but he thought nothing of it, nor deduced any ideas from it. However, being once introduced in a place of worship where a devout old king was expected, the attention of the child was riveted upon two immeasurable drummers, separated by a diminutive fifer-boy, and his eyes, passing from the tall to the tiny musician, could hardly be led off from these extreme forms of humanity to look at the pale king as he stood in white and gold robes, kneeling in his white stuccoed chapel. The sound, so broad from the drums, so acute from the fife, strengthened, through audition, the former

comparisons of proportions made *de visu*; and since, this simple and imposing pageant now stands in the mind of the man, matrix of all measurement, as the Egyptian Pylones of the measurement of the Nile.

These illustrations of the operations of the mind through three senses—the touch, the sight, the hearing, in children whose functions had not yet been distorted by arbitrary mnemotechnical teachings, show the nature of the physiological teaching to be, not the unity of object, but the rational comparison of objects, to be taught through any or all senses. The bird can see farther, the spider can hear better, the blue-fly can smell more accurately, the cat may feel more delicately with its velvet paw, than our children with their corresponding agents of sensation; but the beast's sensations, perfect as we suppose them to be, are only connected with a few instincts, are not connective among themselves nor with past images, and consequently soon die in their isolation, being incapable of forming new images and ideas by comparison, as they do in children.

We may take as an example of that difference, the effects produced by the fall of rain upon a child and a bird. It will hasten home both the bird and the child; but the flight of the former is prompted only by the instinct of security for itself or its young; and the course of the latter homeward will be accompanied, besides his present object relative to personal feeling, motherly injunctions, possible penalties, etc., by ideas about rain as numerous as its dripping drops: rain will beautify the flower-garden; swell the stream in which he can swim,

where his friend was drowned, etc. ; these drops shall soon look like diamond on the grass when the sun shines ; the rain which fell upon him last winter was chilling ; what a difference now ; this is warm, it fumes on his jacket ; warmer it could be inclosed in a boiler, move trains and ships, etc., etc. Thus loaded with comparisons, the boy reaches home later than the bird, but full of ideas induced by this rain. He may, in after years, forget this circumstance, but he will never forget the peculiar impressions and associations experienced and evoked in this first summer shower.

Children are our witnesses ; unlike animals, they never perceive single, but compound phenomena ; from sensational these become instantly idealized by comparison. Mere impressions being compared, become ideas susceptible of combination, and of themselves producing any number of new ideas ; of becoming indeed the mother of actions : for man cannot execute anything that has not been previously born unto his mind. Sensation perceived like a notion, notion fecundated to an idea realized in life itself, such is the unbroken spiral of our teaching, and through teaching, of our action on idiocy. From collecting the sparse powers of muscles and nerves disconnected by the absence of will, to the gathering of the faculties in the act of thinking, our progress has been a constant ascension on the steps leading from isolation to sociability.

Though much more might be said on this subject without doing it full justice, we leave it cheerfully at this unfinished stage, where the experience of others may be more proficient to complete it than ours.

PART III.—MORAL TREATMENT.



Part III.

MORAL TREATMENT.

LONG before physicians had conceived the plan of correcting the false ideas and feelings of a lunatic by purgatives, or the cranial depressions of an idiot by bleeding, Spain had produced several generations of monks who treated with the greatest success all kinds of mental diseases without drugs, by moral training alone. Certain regular labors, the performance of simple and assiduous duties, an enlightened and sovereign volition, watching constantly over the patients, such were the only remedies employed.

“We cure almost all our lunatics,” said the good fathers, “except the nobles, who would think themselves dishonored by working with their hands.” This tradition, handed down to us by Pinel, is corroborated by the testimony of Leuret on the present revival of moral treatment: “See what takes place in idiots. There is nearly always in their brain a vice, acquired or congenital. Is it by physical agents or by education that one succeeds in giving some development to their intelligence? The medical agents would be of no use; nobody thinks any more of using them; but the moral agencies, employed with discrimination and tenacity, produce, on the contrary, in the intelligence and passions of idiots changes

almost marvellous. We infer from this that even if there were a true alteration in the brains of the insane, the moral treatment would yet offer the best chances of success." *

We need more the support of Leuret's authority than he needed ours when, being a daily witness to our efforts, he was pleased to express in these terms his approbation of the part of our method we are going to expose.

The moral treatment is the systematic action of a will upon another, in view of its improvement; in view for an idiot, of his socialization. It takes possession of him from his entrance in to his exit from the institution; from his opening to his shutting his eyes; from his acts of animal life to the exercise of his intellectual faculties. It gives a social meaning, a moral bearing to everything about him. The influences destined to give moral impulse to the very life of the idiot come upon him from prearranged circumstances, from prepared association with his fellows, and, above all, directly from the superior will which plans and directs the whole treatment. We have seen, more than once, in the preceding part, how the moral treatment was blended with the physiological training. We shall see very soon the same element acting like a leaven in labors, occupations, pleasures, or claiming its control over food, clothing, hygiene, or medical attendance. We find it everywhere; and it would be writing the same book over again from another stand-point to describe the working of this training in all parts of the treatment. To be brief, we will expose it

* Leuret, *Du Traitement Moral de la Folie*. Paris: 1840.

only as an abstract power, leaving the commentaries and applications to be determined by circumstances.

The discipline or moral government of idiots, without differing absolutely from that of other children, has its peculiarities. A good many idiots cannot understand nor follow a private discipline expressed by orders, who will follow the general discipline of a school, by a sort of intuition, as if knowingly; they seem to comprehend it through contact with other children. Contrarily, owing to the isolation of idiocy, and to a want of concert among idiots, the mass of them, as such, is on an average refractory to any new impression; small groups receive it better, and individuals best of all. So that individual discipline is at first resorted to, till the group, and then the mass, are familiar with the regular movement of the school.

To enforce, exact, promote, induce, encourage, lead, sustain obedience in idiots, severity would be cruelty. Physical correction is useless, unless blended with the eradication of the wrong. Punishment is to be avoided till it be certain that the understanding of the wrong preceded its commission. Repression cannot be avoided; let it be employed in its mildest forms. A child could not be forced to stand motionless, even were his legs bound, who remains perfectly still in a circle traced with chalk around his feet. The anger of another changes into repentance at the sight of his name written on that part of the black-board reserved for bad records. Indeed, the means of repression are what the intelligence and feelings of the teacher make them.

Recompenses may be given like punishments; that is to

say, provided their meaning be understood. If not, they speak to the sight, stomach, nostrils, etc., but not to the moral sense, and become in regard to it instruments of perversion.

Caresses are of great power for good or evil, and must be reserved as rewards and stimuli. But injudiciously applied, they break the continuity of commenced efforts, cause a diversion from the task and a relaxation of the will; it gives the child an exaggerated idea of his worth, or of that of his doings, and profoundly spoils his moral nature; moreover, a number of children cannot be caressed at all without danger, owing to certain nervous anomalies. Great discretion and reserve are required from teachers and others in this respect, for the moral government of idiots. Here once more we see how difficult it is to fill the place of a mother; in her absence caresses, as an incentive to progress, are not pettings, and less the selection of pets.

Moral education is nothing else than a revelation; as such, its teaching to children by books, or even by common language, would be a complete failure; whereas it is accomplished quite easily, through moral agencies whose simultaneity is the *chef d'œuvre* of the art of human training. Though these moral influences proceed mostly from the ruling will of the master, we must distinguish those which emanate immediately from his own self, from those which are the result of intermediate agencies, prepared by him, or not. These agencies will first attract our attention as putting the child in the best external conditions to become spontaneous and willed afterwards.

Whatever we want a child to do, and whatever might be otherwise our special teaching to that effect, there are certain moral conditions as necessary to our success as the technical ones: those we shall at once consider. These conditions have reference to time, place, and surroundings. The time to command an action, or incite to it, must be not only favorable, but the most opportune: as for instance, the exercise of nomination of food must not only take place at meal times, but before the appetite begins to be satisfied; or the appreciation of temperature must not be made at indifferent periods of the year, but at those when the child will best appreciate heat, cold, dryness, moisture, etc. The places where lessons are to be taken must be not only convenient, but exactly appropriate; thus attention need not be called to any indifferent object in front of an opening towards a fine natural scenery; nor comparison of color tried when the smell is strongly attracted by odors; thus, again, solicitations to activity must be made where there is room enough for action; speech provoked where its effect can be appreciated; the first commands imposed where there can be no escape from obedience. The surrounding circumstances are to be made equally instrumental to our purpose: light or darkness, solitude or multitude, movement or immobility, silence or sounds, etc., are to be chosen or prepared in view of their moral influence on the actions demanded of the idiot. We must remember that our teaching how to do a thing, is to him of no practical value if we do not place him in the best circumstances to accomplish it; as to put him among other children doing

the same thing; to let him see them do it without attempting it himself; to make him imitate the nearest thing to the one wished of him; to let him desire what we desire him to do, etc. The accomplishment of these objects, and particularly of the last, which implies the fostering of new volition, will be partly realized by intelligent disposition of time, place, and scenery, but will be as often due to the influence that the children will exercise among themselves, if philosophically managed.

This moral training of the children, one by many, several by one, all by all, is one of the main springs of the present part of our task. What we cannot command, another child will incite; what we cannot explain to a child, he will imitate from another; what a group cannot do after our command, will be done after the example of a small child. However incapable we consider idiots, they can be made to act efficiently one upon another, if we know how to appose the vivacious to the immobile, the loquacious to the mute, the imitative to the careless, the affectionate to the indifferent. This apposition of children in view of their reciprocal advancement, ought to take place in various ways, according to the object desired: by groups of equals, by series of one capable and several incapable, and *vice versa*, by pairs of two extremes in aptitude, by one commanding the other from outside their ranks, by several correcting the vicious expressions or attitude of whole files, etc. In these multiform operations of the simultaneous training, the child who teaches another, in a certain sense teaches himself more by the reflex action of his will upon his

own understanding ; though it is quite certain, besides, that very many things are taught from child to child that we could not at all, or not so well inculcate ourselves.

The same remark pertains in relation to the class of persons who really and motherly attend the idiots. Though generally quite illiterate, some of these attendants soon develop in the exercise of their functions moral powers which many educated persons cannot equal, because sociability, not learning, gives it ; and though this power is susceptible of being educated, as it is even in idiots, it looks more like a gift than like an intellectual faculty. Whenever that gift manifests itself, by which a being has an ascendancy over another, we recognize in it, in all its shapes and transformations, the qualification for the exercise of moral training ; we accept its course, whether perfected by education or not, because it qualifies its possessor to work with us in some capacity or another ; wherever found, it is the superior good-will ready to elevate the inferior one.

The relations which this power establishes, are those of authority to obedience. We are aware that these relations are in a very confused state, as well in schools as in society. Authority is assumed and denied ; obedience is exacted and refused, on grounds so opposite that conciliation seems impossible. However, putting aside extreme theories, authority is, like obedience, a mere function, whose existence is provoked by corresponding incapacities, ceases when its object is accomplished, and is no more inherent to the individual who happens to exercise it, than his coat is adherent to his cellular tissue. This

mild view of social equality and of functional inequality, fits exactly the exigencies of the moral treatment of idiots.

Our authority over them does not derive from our superiority, but from the desire of elevating them to our standard. Hence, we do not make them feel authority like a pressure, nor obedience like a subjection; but we give them every opportunity of exercising the first themselves in the limits of their aptitude, as well as of acting under the reflex impulse of the second, whenever their spontaneous impulse is yet deficient. When we try to socialize the isolated idiot, we do not mean to teach him reading, music, etc.; we mean to give him the sense and the power of establishing in the limits of his capacity, social relations, *rappports sociaux*, whose everchanging scale is expressed by the two fixed words, rights and duties. Duties being less imperative, in an uneducated conscience, than rights, we have often to enforce the former to a certain extent by unmitigated authority, as was done for mankind, till the child becomes conscious of the equivalence of these two terms: the right of one is the duty of all, the duty of one is the right of others, Idiocy being isolation, its victims are not expected to be carried, when already quite old, from their ambient vacancy into a world of contacts and associations, creating incessant rights and duties, without difficulty on the part of the teacher and suffering on their own. This struggle would hardly be noticed if the moral treatment were carried on by parents from the beginning. But far from this; when an utter neglect does not prevail, a mawkish

sensibility opposes itself to any effort at improvement: "The child is naturally miserable enough, do not contradict him," says the mother. And the child, as low as we can suppose him, takes heed of that sickly feeling, and will never do anything till he is kept for a long time away from this deleterious tenderness. We have seen idiots, after a year of obedience and contentment, relapse into their anti-social habits at the sudden reappearance of the weak-hearted person who once indulged their idiotic propensities, and the same children resume their orderly habits at her exit. But soon, for the most extreme cases, and always for ordinary ones, authority need not present itself in its historical features of absolutism, but assumes more tender forms as soon as it is firmly established.

Nevertheless, whatever may be its form, authority, to be obeyed, must command; in the varieties of its expression, and in their opportunity, resides a large part of the moral power of the commanding over the commanded. When we consider the qualities necessary to render commandment effective, we soon discover that those of speech do not come in the first rank; at least that its action must be preceded and corroborated by that of other qualities which enter for very little, if for anything, into ordinary language. Therefore it would be useless to proceed farther, without entering into a complete analysis of the elements of command, as it must be used with idiots. Leaving aside the disputable rank of importance of these elements, we shall simply present them as they come forth in reality.

The first conditions necessary to render command effec-

tive are lineaments and shape; the second, proportions and attitude. The lineaments of the face or its features, the shape of the body or its proportions, may offer or refuse their concurrence to command. The defects of the former are nearly irremediable; those of the latter may be corrected. It is thus that certain lineaments impress the human face with so deep an expression that no other can ever be substituted; or are so rigid that no intellectual or passionate meaning can pierce through their unmeaningness. Nearly the same thing occurs with the shapes of the body and its proportions; some are only ludicrous, and cannot convey any command; others are set naturally in such attitudes of repose, quietness, or the like, as to counteract any command to action. These are only a few of the ways in which features, proportions, and attitude may impair the efficacy of authority. The exercise of these qualities requires a good organization, mobility of the parts, and a fair sensibility, easily controlled by the will: with these advantages, the face and body are ready to command.

Though the eyes are a part of the features, their office is so important that they are to be considered separately. The look is the passionate centre of the physiognomy; all the other parts coördinate their expressions to its, unless skilfully contracted into a mendacious expression, which the eye can rarely imitate. The influence of this organ, as an instrument of moral training, cannot be overrated, whether we consider it from the master's or from the pupil's side. For if the look of the former is alternately inquiring, pressing, exacting, encouraging,

caressing, etc., the look of the latter is avoiding, opposed, submitted, irate, or grateful, borrowing its expressions from feelings incited by the former. To obtain this result, the master's look must have taken possession of the other, have steadily searched, penetrated, fixed, led it; and here the constant use of the look, already described in the physiological training, is found corroborated by its use in moral training, and *vice versa*.

The influence of the limbs on the effectiveness of command is equally distinguishable from that of the body in their *ensemble*. The way in which we stand in front of a pupil is not indifferent; and our foothold tells pretty well the degree of our determination. In this respect the various positions of the legs, and consequently of the rest of the body, are very instructive. How many things our attitude alone will command. We can stand before an idiot so that he will remain quiet; we may stand by him so that he shall hasten his steps, or dignify his deportment, etc. The arms and hands are more powerful yet, at least for the command of special movements. The finger directs, averts, corrects, threatens; the hand excites, restrains, forwards, stops, puts down, nearly all expressions of activity. A waving of the hand cheers and encourages; a warning of the finger cuts down an incipient action: with its rise and fall it rules the tide of commanded or forbidden manifestations.

But how far is the easy, monotonous, inexpressive gesture, which hardly accentuates our ordinary language, from impressing the idiot, not only with our meaning but with our will. Gesture then must be subjected to a spe-

cial education to acquire precision, correctness, quickness, cabundance and emphasis; to become capable of speaking of itself, or to complete language; and to assume the force and fluency of an oration that the eye shall follow in all its details as the ear follows a spoken one in its meanderings: on this condition gesture becomes one of our moral powers.

When the parts of the body, not only those studied above, but all fibres, are so harmonized for the mute act of command, there comes forth the speech. Not that speech is necessarily commanding; like gesture, it is rarely so *per se*, and requires a good deal of art for its maturation. Taking away the language of conversation, inquiry, reply, narration, discourse, recitation, whose expressions are unfit for our object, what is left of ordinary speech to accomplish it? Very little, indeed; nothing but the potential capacity of speaking as few men ever do—not to be understood, but to be obeyed.

For idiots, this difference between the varieties of speech is deeper yet. Without selecting our illustration as far down as the children who do not pay any more attention to language than if they were deaf, we find the majority of them inattentive, unintelligent, and inobedient to common speech. This difficulty admonishes us that language, even as a means of communication, but more particularly as a mode of ascendancy, is to be heightened above its ordinary expressions to impress idiots. Voice and intonation, articulation and accent, rests and emphasis, are to be emitted, not as syllables following each other in a stream of uniform flow, but as musical notes on the

superposed keys of the gamut. Purity of voice, variety of intonation, correctness of articulation, etc., would be expended in vain if they were not entirely adapted to the desired object, and besides, to the condition of the child at the time we address him; so that not only every word is to be invested with a different physiognomy in each command, but if the same command is to be repeated, each word of it must be accentuated at each repetition, according to the degree of attention previously paid, or supposed to be next given to it. In this manner, an order completely unintelligible, or unenforcible at a single command, will become understood and enforced after several repetitions, each one representing a forcible commentary of some of its parts, and all of them the whole of it. If this precept of commanding by words is too simple to be comprehended, we will exemplify it in this wise. Suppose the objects known, the master orders the child to put a book on a table. "Put this book on the table," he says, in the ordinary tone; and the child, half listening, does not quite understand, and does not obey at all. Whereupon the master repeats successively: "PUT the book on the table;" and the child takes the book, keeping it in his hand, not knowing what to do with it. "PUT the book on the TABLE," says the master again; and the child approaches the table, book in hand, uncertain yet what relation to establish between the two known terms—book and table. But the master continues: "PUT the book ON the table;" and the child places it on the table. The next time he is told to put the slate *on* the table, the dumb-bells *under* it, the balancing-pole *near* it,

and the cage *above* it; a slight emphasis upon these words shall suffice; and more obedience will become easy in the same progression. By this example we do not mean to prescribe identically for other cases; often the verb has to be presented prominently in various ways; once for its meaning, and several times for its commanding value, expressed by the imperative mood. Moreover, each child obeys more or less easily; each child understands differently the relations to be established between objects by his own action; consequently the same order cannot be imposed upon two children with the same voice, accent, etc., in the individual teaching.

But when we come to the training of groups, in which we require less attention and more spontaneity, in which we teach less new things than simultaneity of comprehension, or of execution, then the moral power of command assumes more the forms of an artistic action; the master really acting before and for an audience, whose mean average intellect he reaches or misses, according to his present power, or to the correctness of his own judgment at the appointed time. Who has taught idiots, and not felt once in a while, when sick or laboring under mental depression, that all his powers failed him, that those once sovereign commands, which but lately could carry the children through almost any undertaking, cannot move them to-day, and fall like broken arrows at their feet? This failure, which every one of us has felt, is the most eloquent demonstration of the reality of the moral power, by which man acts upon man, as upon plastic matter.

Thus command is expressed by attitude, corroborated by gesture, animated by physiognomy, flashed by the look, made passionate by the voice, commented upon by the accent, strengthened by the articulation, imposed by the emphasis, and carried by the whole power of the stronger on the weaker will. This power, as expressed here in the abstract, would be the most wearisome attribute of its possessor, and the heaviest burden on children, if it were not incessantly modified by circumstances, and by passing from one person to another; passage in which it loses its tension for the master, and its grim appearance for the child. Moreover, for reasons easily understood, and insisted upon afterwards, the moral power of command must not be always exercised immediately, directly and from man to man; but by a law of descending gradation, it becomes from immediate, mediate, contingent, negative, etc. It is also modified by habits, studies, moral progress, etc. These forms and circumstances varying *ad infinitum* by their own combinations with the variety of character, we shall treat of them abstractly, as if they were invariable: sole expedient to give them a fixed type.

Immediate command, the most stringent, sometimes painful, must be too often supported at the start by coercion. If idiots were all brought up by intelligent parents, and in sufficient comfort, they would have no occasion to oppose the asperities of their negative will to the moral influence which tries to elevate them. But oppression everywhere creates opposition, and the idiot as well as any other man tells pretty well the tale of his

past sufferings by his degree of resistance to any improving intervention. No is his first word; negation is his first action; he spends more strength, and often more ingenuity in resisting than he would require in obeying; he will not. He will not, but we will for him. Here is the point where coercion, when necessary, assumes its importance. Corporeal punishment is out of the question, but compulsion is not, because it must be used, or idiocy would be stronger than sociability. Coercion is painful, but less so than the shower bath, cold affusion, strait-jacket, etc. Imperative command is painful, but not in the same manner as underhand and fruitless brutalities of servants and keepers, doleful lot of uneducated idiots. On this head let us ponder what Leuret courageously and frankly says: "My object is not to cure by one means or another, but by any possible means; and if to cure my patient I must appear hard and even unjust towards him, why should I recoil from the use of such agencies? Should I be afraid of making him suffer? Strange pity! As well bind the arms of the surgeon ready to perform an operation necessary to save the life of his patient under the plea that such operation could not be performed without suffering. A man has the stone; gorge him with flax-seed tea, daub him with poultices sooner than to relieve him by a painful operation. . . . Whatever be the cost to your personal feelings, let us have the courage of the surgeon; our instruments are the passions and ideas; let us employ them, even the painful ones if necessary." This rule of conduct, traced by a master in the art of moral training,

is worth treasuring. Leuret says besides: "Physical pain serve the insane and idiots as other men, as a means of education; it is one of the motors which lead us to avoid the wrong and to search for the right; but it is not always necessary." And from our own experience, let us add that where coercion is necessary, it lasts but a short time if properly handled. Indeed, the stronger is the coercion, the shorter is the struggle, the less is the suffering. Idiots know this, and whatever may be their low condition, they understand our meaning, can measure the opposed forces, and will behave accordingly.

Fortunately, coercion need not often be called to the support of immediate command, which is itself an instrument of great power. For, to command immediately means to command without the mediation of anything or anybody; means to employ the forms of command which can directly touch the child, and take an anticipated direction of his contingent doings. For instance, if when ordering an immobile idiot to move the dumb-bells, we stand in front of him, near enough, and in the most immediate conditions, he will do it; but if for the same object we stand at his side, though everything else be as imperative, we see his hand on our side working the dumb-bell and the opposite hand motionless, disobeying, because for the former hand our command was actually immediate, whilst it was not so for the second. And this difference is the more surprising if we consider that the simple balancing of the dumb-bells is a coördinate movement of both sides of the body, whose symmetrical duality is the rule, whose dissymmetry cannot be pro-

duced but by a special effort of the will, of which idiots do not seem capable. Here, evidently, the propulsor of the child was outside of him; felt only by immediate contact and adaptation of our faculties to his organs, and impotent at a greater distance. But we must remark, as a warning, that immediate does not mean incessant, and that this severe form of authority, well managed, does not require to be used many times, nor in serial succession, to produce its desired effect; but that soon the command may be allowed to drop, as it were inadvertently, some of its stringent pressure; or to present itself here in its armor of battle, there in the more pleasant dress of the mediate command.

The mediate command is one given in such circumstances that the child can disobey it if he choose; as across a large table; from one end of a room or garden to the other; in the middle of a group of other children; when that command interrupts a more pleasing occupation; or when it must be obeyed after a certain time has elapsed. Thus, in the mediate command, there is a medium of space, time, object, or person between us and the child; and moreover, that medium may be temporary or permanent, insignificant, effective, or absolute, representing the degree of trust which we can repose in the good faith and good-will of the child; it embraces a wide range of relations.

Before going further in our analysis of the various commands, we are to see what can be commanded successfully or not. To the idiot who will do nothing, we have to command something; but the nature of that

something is, at the start, of the utmost importance. At first the idiot is determined to do nothing; we are equally determined to make him do something; thus matters stand. Will the idiot, or we, succeed? Can he resist our will, or can we overcome his negation? And if we have the will necessary to succeed, have we the knowledge of the series of actions that we can, or cannot, oblige him to do? For if we cannot enforce our first command, the idiot will feel superior to us, and many trials will be in store before the legitimate ascendancy can be established. Therefore the line of demarcation between that which the child can safely refuse to do, and that which he may be obliged to perform, is of great practical value. We establish that line by observing that it is generally easier to repress than to produce actions; and that the idiot may sooner be refrained in his instinctive manifestations, than forced to produce some intelligent ones: this is the line. Our first orders, therefore, those which must be obeyed, or else the whole treatment is compromised, must be chosen from the class of the things which can be made to be. For instance, we must not order, at first, a child to open his mouth, for what power on earth can make him open it if he will keep it closed against your order? But, on the other hand, what opposition can he offer to our command not to scratch his face, if we occupy his hands at a distance, at the same time that we forbid him to do it. Consequently, let us only command at first that which we have the power of enforcing; and when the child shall feel, after a succession of such commands, that he must obey, we surrep-

ticiously introduce others of a more arbitrary nature, to which he submits himself without noticing their difference from the first; and soon he obeys any order of ours, not because he cannot avoid it, but because he feels that he ought to do it, and finally, because he likes to please us in so doing.

Then the milder form of command, postponed to make room for this explanation, will be resumed. The most comprehensive form is the contingent, conditional, or even simply optional, which may depend upon actions of the child, or of others, present, past, or future events; taste, and contingencies calculated to leave more room for deliberation in obedience. These pre-arranged conditions must be simple, and immediately precede the required action; but later some interval may be left between them, and more time allowed for remembrance and reflection; more to evoke and draw conclusions, and more to think before acting, to favor the rise of consciousness. In this degradation of the original command, the passiveness of primitive obedience has made room, little by little, for the judicious execution of orders; this is not yet spontaneity, but discriminative obedience.

At this time, other forms of command succeed: negative, that which results from not leaving any room for disobedience, letting circumstances themselves impose the order; silent, when the simple presence of the master, near or distant, is sufficient to renew the vividness of past orders; imitative, when the preconcerted action of other children carries with itself an implicit command to do the same; attractive, when showing the pleasant result of an

act, we make our child venture to do the same ; but at this extreme limit of mitigation, command loses its name with the remnant of its harsh features ; and authority is no more than a watching kindness.

Command, of whatever character, is alleviated besides by the variety of its modes of application. Where children are submitted to protracted sittings under a single rule and for a single object, command is depressing ; but when, as in our case, the rotatory system transfers incessantly the children from occupation to pleasure, lesson, exercise, labor, excitement, etc., the forms of command must vary to meet the feelings of indifference, pleasure, antipathy, attraction, resistance successively provoked ; and the result is not depression, but elasticity favored by the constant action of the masters on the children, and *vice versa*.

Another mitigation of the harshness inherent to authority results from the different characters of those exercising it. The child who breathes constantly under the sledgehammer of not unfrequent paternal rigor, presents a narrow chest ; the idiot commanded in the same way becomes automatical, even in his intellectual acquisitions, nearly as much so as he was in his primary isolation. But the rotatory system of training idiots, and its consequence, the natural division of the functions, accomplished in their behalf by persons so different in their moral powers as attendants, teachers, gymnasts, matrons, physicians, does not permit authority to typify itself, even one hour at a time, in one of those oppressive modes which leaves a depressed imprint on a child. If the teacher has been

protracting his attention, the attendant soon invites him to a pleasant song; if series of numbers have been piled up on the black-board, scores of harmonies from the piano take their place; if the gymnast has used a hand to redness, the doctor pats it gently, at the same time that he makes sure of the sanitary condition of the skin, look, pulse, etc. This variety in the manner of handling idiots, precludes monotony and aggravations. Ordered in so many ways, the child passes from one commander to another, without suspecting that he is passive. This supple and mobile passivity itself becomes in a certain sense active, and obedience becomes a voluntary action by the simple effect of timely variety and gradual relaxation of authority: the bird is free to soar in all healthy directions, if he will.

Does this mean that our work is done; that we are no more wanted, nor our authority required; that the moral treatment has exhausted itself; and that the negative will being broken, obedience secure, we must rest satisfied in presence of our work, an unresisting, obedient child? No: evidently we have come to the bifurcation of the road leading to passivity or to spontaneity, whence our pupil may start for a reflex life, whose spring shall be in others' hands, or for a self-regulating life, whose spring is within his conscience. Whole nations and millions of men are yet deprived of this consciousness of their station, in ambient society by the total deprivation of moral training. And yet, it would not be difficult to point out young men, former pupils of our institutions, generally from among the most distressing cases of superficial

idiocy, who certainly could not have been improved anywhere else; and who, to-day, are far above the average of men in regard to the regulation of their actions by their own conscience of right and wrong. True, there are not many such; but the majority of the others, remaining backward owing to their yet feeble intellects, can govern themselves under a slight and benevolent supervision; since idiots once trained do not require for the maintenance of their social behavior anything equivalent to policemen, *gendarmes*, etc., kindness, not force, is their tutor, as it was their teacher.

We bring them to this point of moralization, generally far superior to their intellectual standard, by extreme care and affection, but easily enough; because their infirmity, in uncomplicated states, affects the perceptive faculties, even the spontaneity, but does not create any aberration of the affective faculties, as does imbecility, or some special forms of insanity. Consequently, our success in this matter, which is of the utmost importance, must be considered due as much to their good nature as to our own exertions. Nevertheless, whatever could be their share and ours in the result, to obtain it we cannot too soon commingle the incitations to spontaneity with the most passive or unwilling exercises of the training. Long before we have done away with commanding under all the forms enarrated above, we must begin concurrently to use the gentler forms of inducement, which conduct the child insensibly from the diverse degrees of obedience to earnest self-government. Those forms we call incitations to spontaneity, unless we employ the words motor, mover,

or motive, whichever may best express our meaning, or be understood. Henceforth, we do not command, we incite ; we put the child in contact with motives, and he moves ; we create for him, in the artificial atmosphere of the institution, the same relations which impel men of the world to action, and he acts ; we present to him attractions, and he is attracted in the measure of his attractability. Hence, he desires, tries, plans, succeeds, fails, gets elated or discouraged, loves and feels of his own free will, as he would under the incitations, apparently accidental, of social life ; the only difference being, that we have prepared and graduated to his proportions the contacts to be encountered, or the obstacles to be overcome, whilst, in ordinary social life, such earthly providence is not to be expected. This begins at the lowest point of animal life, but we shall not choose our illustrations lower than the act of feeding.

When an idiot commences, not to receive, but to take his food, we overlook, for our present object, the coarse tearing of the meat, the hasty swallowing without mastication, and other depravities equally repugnant and unhealthy, to consider only how intensely animal and selfish he is in his action ; how much more he needs the spiritual than the material nutriment of bread ; and our duty becomes manifest to make him understand the book of wisdom contained in a mouthful. As he was himself fed by others' hands, as soon as he can carry a morsel to his own mouth, he must be made to present the same to some children incapable, in different ways, of feeding themselves. He must be made, besides, to feed animals chosen

for the lessons he may get from their perspicuity of sense, vivacity of movement, and neatness in eating. But these incitations by the example of animals must be carefully selected, otherwise from some of them he might learn vicious modes of mastication, or excessive appetite for flesh, or even confirm himself in his greediness. Then he must be placed at table next persons who give constant good examples, who timely correct his bad habits, and admonish him orally with great discretion, for appetite is deaf.

Appetite naturally speaking louder than morality, the voice of the first must be lowered, that of the second heightened. For this reason, we should not make them eat in large groups, within sight of huge dishes; but they should be served in small rooms. Being few at a family-like table, they have to wait long enough to give each one the chance of controlling the beast which is inside his stomach; not so long as to let it loose in disgraceful manifestations. The same scrupulous care will direct the apportioning of the children's food. Not only the cut or measure requires an ever-changing discretion to meet the requirements of changing appetites and climatic circumstances; but the hand responsible for this duty must never appear tired or careless; for often the child despises his food, or eats it grossly, because it was carelessly served or handed to him. In the same train of care and delicacy, as soon as convenient, the children should be made to wait upon each other, with order and decorum. How can we make them do it? Not by telling, arguing, threatening; for we repeat it, hunger is

deaf; but by the incitations of example from birds, animals, other children, and mostly from ourselves; the best example is our own. We must be their teachers in this, by being their servants; our serving, teaching them to serve others by imitation, emulation, ambition even; do they not want to do as the teacher does? When this ambition begins to produce its normal effect, we open a new issue to their mind through their food, by asking if they have produced or helped to prepare it; what part they had in this, what part others, etc. Then we must make them realize, in a tangible manner, that the food they will take, and which shall sustain their vitality, is the result of the concourse and combined efforts of hundreds of their fellow-men, who have contributed it for their comfort. We must make them aware of their relations to those who have worked and suffered as farmers, gardeners, bakers, to produce this food, and to those who, less fortunate, hunger and have nothing to eat. In this spirit, the idiots of Bicêtre repeated before meals the following blessing: "Our Father, bless the food we have before us, and so let it be that the poorest have the same. Amen." Another equivalent, after meals, and others adapted to their studies, work, etc. By no means would we have it surmised that we were participant in any mummery; but we tried in simple words to convey to simple children the simplest ideas of equity and reciprocity between men under the Supreme Justice, and we think our efforts were partially successful.

Another prominent occasion for the application of the moral treatment is the work. But here the subject is so

vast that we cannot even pretend to mention all its important points. Idiots must be made to work for a result. That result, or product, must be sensible and comprehensible in proportion to their perception and intellect; must, be, at first, of personal and immediate use, such as to draw water to quench actual thirst, or pull up from the garden vegetables to eat presently, etc. The next and complementary step leads them to do the same, or similar work, for the satisfaction of others. Soon, again, they must be made to work in coöperation; several to help one, one to help several, one helped for his own good, or helping for the advantage of others; all manner of solidarity, either in the work, or in its result; working as a social element, as a moral status.

But here we speak of enforcing the moral and social duty of working, upon unfortunate children scarcely reclaimed from their nothingness, before inquiring if they are in a condition to support, like all of us, the tedious and exhausting burden of labor. Men must work because working is the only way of producing; and produce we must, since we consume. Idiots escape that law as long as their infirmity incapacitates them; otherwise they too must work in the proportion of their strength and capacity. But all that could be expected of the most successfully strengthened and educated among them, is from four to five hours' labor a day; just the share of each one of us if all were working.

But can the idiot be made to work in competitive industry, where steam and machinery force production every day to an extent unknown the day before, and re-

duce proud mankind to the shape and degradation of the stunted, sallow, and sullen workmen of Lyons, Lille, Manchester, Birmingham, etc. If idiots are to be so employed, it were better to leave them in their primary condition. Nevertheless, we do not ignore that some idiots manifest peculiar tendencies which can be utilized in one mechanical trade or another. Where such strong natural ability exists, let it be followed up, if the child himself can derive profit and mental happiness from its prosecution. But this peculiarity does not belong to a class; being only the strange gift of one in many, it cannot justify their miscellaneous packing in shops. The very few in-door labors they can be put to, are more or less connected with the various departments of housekeeping. In this line, children feel the solidarity of the principle, understanding easily that they work for themselves and friends; if they do not make money by it, they gather a harvest of sense, of order and mutual dependence, with appropriate feelings and ideas related to their position and social standing. Otherwise, and under any other circumstances, they must work as much as possible with the concurrence of nature, and with the genial coöperation of the sun. By all means we must let this be their life in the institution.

The relations of money to food and to labor are to be presented to such of the children as can understand them, in the most practical form; their own books establishing the balance of their accounts with the institution; each child credited with the value of his work, and debited with his expenses. When they have followed a class of

pricing (as we understand there is one in the Earlswood Institution, England), for usual objects, with critical observations on the qualities requisite in each, such as shoes, books, gloves, needles, etc., we send them to make experimental purchases with their own earned money, and let them and the other children debate together the result of these foreign operations.

As a set-off and compensation for so much care heaped on frail beings, we devote as much time as we can to the most sensible of our duties, to make them merry and gay in innocent relaxation. Those who have seen idiots, at the second stage of their education, so shy under a strict rule, so daring in the play-room, will readily understand our meaning. But it takes a long intimacy with the sterner forms of the infirmity to get at the mystery of the silent progress accomplished by the lowest idiots, during the first and nearly despairing period of their training, when admitted to witness the liveliness of the play-room. There, the pleasures enjoyed by the more forward pupils have a reflex influence of a curious character upon the worst cases; the immovable feel reflectively the exaltation of the impressible; they enjoy through the joy of others, and seem to prepare themselves for future like enjoyment, by occasional twitchings of some muscles, more abundant dribbling of saliva, or an erratic smile; as we see the chrysalis moving its future wings under the bearings of its dirty gray cocoon.

But the feelings of idiots are not all of an indescribable nature; on the contrary, what the majority of them feel, whether joy or sorrow, they express openly and accu-

rately. If any person coming among them be indifferent or attractive, we see it reflected on their face; if the entertainment prepared for them be pleasant or not, we read it in their countenance; and it requires a pretty good insight into their character to hit the mark. Therefore the actings performed to please them, with the concurrence of some of their number, as in Syracuse, Media, Barre, and Earlswood, are to be planned by their best friends and teachers, who become for the occasion impresarios, managers, and costumers. It is astonishing to see how real idiots enjoy these representations; and it is touching to see them trying to bring the acting to the understanding of their lowest fellows. Next to these stately representations, and several times a week, comes dancing, and many times a day comes music.

Promenades for a short distance, excursions farther, must be of frequent occurrence. Not that we advise them for the mere object of airing the children, or of improving their physical health, but to prepare a special end to them each time; and although that end will not always directly have a moral object, yet the children will contract by it the moral habit of giving an object to each of their actions, and of planning and expecting a return from each of their undertakings: conclusions highly moralizing of themselves. Therefore, if we often send some children to carry objects of comfort to a destitute family in the neighborhood, we send them too on the beach to collect shells, or in the meadow for violets; the woods will furnish them one day with green leaves, another with russet or red ones; at one time, at our suggestion, they

hunt for the smallest, at another for the largest leaves; again, for blue or red berries, or for nuts, acorns, etc. The very stones may be collected on the way, according to color, form, or size; we must never let our pupils return empty-handed.

The institution is never so far from a city that its inmates cannot be admitted to the sights of civilization and wonder. We must beware of too much isolating the naturally isolated idiot. By sending him, as soon as he behaves, to church, to the museum, meetings, shows, and even theatres, we do not so much create in him a taste for those things, as a desire of mingling with yonder world; pregnant curiosity, which is of itself one of the mainsprings of life. Besides these amusements, Christmas, New Year's day, and other holidays should be duly observed.

The children must have stores of playthings easily destroyed and renewed. Before leaving these in their hands, we cannot avoid remarking that there are none of them which have not certain qualities and effects, in relation to our children, worth studying. Some of them are to be enjoyed alone, some in common; great distinction which must, above all, govern their distribution. Then come the particular characters of each; we would not have Punchinello make his automatic gestures before a child whom we want to cure of the same; nor would we like to hear the barking of a *papier-maché* dog near a child whose voice is not yet settled in the human notes; we would avoid, as much as possible, toys used individually for children addicted to loneliness, and try to give a social

character to those which are generally made to amuse a single child: the more numerous the players, the more lively and social is the game; we can never teach too many children, nor too often, with toys. They may be taught in school many things utterly useless for their improvement; but they cannot be made to play together, with or without toys, without learning and increasing their moral qualities: playing is a moral power, amusing the lowest idiot is another; our children must enjoy both.

In the school, at meals, in the fields, on the play-ground, all points of contact for these secluded children, how many chances has the teacher to appose them in relations which shall create their sense of moral association, their sociability, and their family-like affinities. But it is easier to let grow, out of unprepared contacts, rivalry, quarrelling, and disaffection, than to thoughtfully prepare the associations of our charge for the production of concert, harmony, and affection. However, circumstances may occur in which the best prearranged contacts become painful to some; those who cannot be saved these asperities, must have their sore feelings soothed; and all of them may be taught to love by being loved. Who could do it better than those who have devoted themselves to their improvement? To develop their sense of affection, as were developed their senses of sight, of hearing, and others, does not demand new instruments or new teachers, but the extension of the same action upon their feelings. To make the child feel that he is loved, and to make him eager to love in his turn, is the end of our teaching as it has been its beginning. If we

have loved our pupils, they felt it and communicated the same feeling to each other; if they have been loved, they are loving in all the degrees of human power conformable with their limited synergy.

We should like to say how this is to be accomplished; but who can tell? Leuret, being asked about that moral influence, said that he could not tell; all depended on inspiration and circumstances; all unforeseen and impossible to foretell. We characterized it as an action of the stronger on the weaker will for its improvement; but it is an action incessantly varying, upon terms constantly modified; phenomena evading analysis, serial evolutions escaping graphic drawing. In its march it begins with the most profound feelings of pity and charity for the unfortunate; it continues through compulsory, impulsing, or inciting commands; a work ever changing in form, never changing in object; unremittingly coaxing the isolated child into society; it is throughout a work of devotion. In this work the teacher, the nurse, the physician, the philosopher, the physiologist, the psychologist, and the moralist have something to do. But their doings are all subordinate to those of the most profound affection. For our pupils science, literature, art, education, medicine, philosophy, each may do something; but love alone can truly socialize them; those alone who love them are their true rescuers. The men who pretend to treat idiocy with talent, erudition, even genius, may find the appreciation of their Utopianism in these words of Paul: "Though I speak with the tongue of men and of angels, and have not charity, I am become as sounding

brass, or a tinkling cymbal; and though I have the gift of prophecy, and understand all mysteries, and all knowledge, and though I have all faith, so that I could remove mountains, and have not charity, I am nothing." Evidently the apostle knew more than we about moral treatment; and we close our feeble remarks by meditating upon this forcible text on the subject.

PART IV.—INSTITUTION.

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INSTITUTION.

THE establishments founded for idiots have been called by various names—Schools, Institutions, Asylums, etc. The term school expresses well the place in which these children are educated, and that of institution leaves more room for the understanding that therein they are boarded, nursed, and especially treated also. Nevertheless, it does not seem proper to employ one of these two terms to the exclusion of the other without having taken the advice, duly debated and matured, of the persons most engaged in the work. This seems one of the questions relating to the subject which requires the earliest solution.

We are aware that the appellation of asylum has been attached to several of the most important schools. But this term conveys exclusively the idea of a custodian, life-long place of retreat, whereas the institution or school is only temporarily open for educational and physiological treatment. In it idiots and their congeners are expected to remain during the period assigned by nature for progress in young persons, unless it sooner becomes manifest that they cannot be improved at all or any more, in which case their parents should take them out to make room for new pupils. In all respects this is an institution similar to those for the deaf mute and the

blind. Besides, the term asylum is wanted for a necessary appendix to the school, in which idiots and other victims of incurable affections of the nervous system shall be received for their lifetime, when, after having followed, with only a partial success, the curriculum of the school, they are found destitute of means or of kind parents. The asylum would be the place where they would be cared and provided for, in the same spirit of charity in which they were taught, if it be connected with the institution, organized like a farming family, and managed by retired teachers and attendants, understanding the peculiarities of idiots and accustomed to treat them like their own children.

The report of Orfila to the Administration of the hospitals of Paris (October 12, 1842), and that of Serres, Flourens, and Pariset, to the French Institute (December 11, 1843), are the twin corner-stones of all the institutions since founded for the education of idiots.

In Switzerland, Guggenbühl, and in Prussia, Saegert, soon worked on the data furnished by our numerous pamphlets, issued from 1838. On this side of the Atlantic, Dr. Frederick Backus, of Rochester, worded a report to the Senate of the State of New York, for the foundation of the first State Institution for idiots. It was voted by that body in the winter of 1845-6, but subsequently defeated by the Assembly. Our first private school was opened by Dr. H. B. Wilbur, at Barre, Mass., in July, 1848; and in October of the same year, Dr. Samuel G. Howe opened in South Boston the first State Institution, due to his persevering action on the Legislature of Mas-

sachusetts. The State of New York had the plans of Dr. Bäckus realized in 1851. Pennsylvania owes to Mr. J. B. Richards the beginning of her State School in 1852; Ohio, Kentucky, Connecticut, Illinois, following. England founded the institution of Highgate in 1847, and that of Earlswood in 1853; Scotland had hers later; all civilized countries have now one at least; but none has so many in fact, and in proportion to its population, as the United States.

It took ten years to found the method of training idiots, and it required fifteen more to found the institutions on the most solid basis of the budget of nations. After having exposed the method, it would be a great pleasure to describe and compare the various institutions, but the means of doing it are not within our reach; and after reflection, we are now inclined to think that this deprivation may be turned to good account, by permitting us to say with more independence what the typical institution must be, rather than what each of the existing ones is.

Supposing the seat of the establishment selected according to the Hippocratic rules in respect to air, water, elevation, and genial exposure, we advise only to locate it in the mean and most equable temperature of the geographical circumscription in which its future inmates have been born and raised. Any great change in this respect would be followed by unpleasant consequences; though we are inclined to think that in extreme latitudes a slight deviation from this rule would be rather favorable, if it carried the institutions of the North a little to the South, and those of the South a little to the North.

By this artifice, the climate of the former shall not be more intensely, but longer warm; whilst the climate of the latter shall be favorable to labor and exercise for several weeks.

The buildings of the institution must have a special character, unlike those of any other educational establishment, to correspond with certain idiosyncrasies of the children and with numerous exigencies of their treatment. Idiots vitiate the air very rapidly; hence the necessity of supplying them with more than an ordinary share of it, by making their rooms very high and large, very airy and easily ventilated, accessible equally to natural and artificial heat. Their training, unlike that of ordinary children, requiring movement, noise, and show, demands a special distribution of the building, which, in this wise, becomes one of the most effective means of physiological education: upon this we must dwell at some length.

Part of the Casement, founded on high ground and well drained, may be used for bathing, and for taking the meals if the windows be situated so that the children can, from the tables, enjoy the view of the gardens, purposely ornamented. The dining-rooms must be numerous, small and neat; so that the children may be grouped in each as at a family table. The upper stories are devoted to sleeping apartments, infirmary, and the like. The dormitories are large, but in no instance should contain more than four to ten children with one attendant. These rooms are kept tastefully in order by the same attendant, assisted by her children. There are no means of com-

munication from the side, story, or building occupied by the girls, to that of the boys.

The ground floor is the institution *par excellence*, the learning, moving, acting of the children, taking place on this floor, whose distribution must be entirely subordinate to the necessities of the treatment. When these shall be better understood, the reception-rooms and other accessories will be removed from this floor to give free scope to the general training. The partitioning of this floor must be so contrived that each room may be closed by itself, or all of them wide open, connecting as a single circular hall. This, as a whole, serves the various purposes of the general training. It may be seen at a glance that to be made serviceable in this wise, the space occupied by the school apparatus must be insignificant, compared to that left for the movements; otherwise, each room having its decorations, instruments, and character perfectly determined, according to its destination; and, as these apartments substantiate the special training, at least the greater part of it, we must describe the most important of them.

For these special purposes, the rooms must communicate freely, be closed easily, intercept the noises from one part to another, present large wall surfaces opposite to large surfaces of light; the ceilings must be lofty but even, without any relief or colors unduly attracting the attention. The floors must all be on the same level, for carriages to transport the most immovable pupils, and things generally; otherwise the floor of nearly each room

must be marked in a certain manner, for the different exercises to be followed in them, as we shall see.

Though it matters little which part of the institution we describe first, we may as well begin with the delineation of one of the numerous recesses where an inattentive and ungovernable child is taken apart, now and then, to fix his attention and reduce his disordered movements to firm immobility. This is a mere nook, uniformly colored like a studio; lighted by a single window with no landscape, no accessory ornament, no furniture save two firm blocks, shaped like the sole of the feet, and destined to support, like pedestals, the child at a height from which he cannot escape, and whence he can, must, and finally will take notice of the presence of his teacher, or of a thing offered to his sight, in the absence of anything else to be seen.

Near at hand must be the large-sized room, in which involuntary exercises of the feet are taught; the self-acting swing, opposed to a spring-board, from which the feet borrow strength and elasticity; the ladder lying on the floor forcing the child, who must walk between its rounds, to raise his feet; the treadmill whose floor moves, and makes the child walk *in situ*; the blocks rising from the floor at regular walking distances; and parallel to them, the painted footprints on the floor; the former to make the regular walk compulsive, the latter to make it obligatory. Here, dumb-bells are only used as means of equilibrium, to give regularity and firmness to the walk. That room has an issue upon stairs, expressly built with series of variously sized steps, to teach the going up and down: dumb-bells are carried there too.

The room in which are performed the exercises of personal imitation, must be exempt from noise, ornament, or attraction of any sort. Its floor must be marked here and there with straight and curved lines, and with series of footprints upon which each child is expected to stand, or fall back to in due time; these footprints affecting a straight or slightly concave line, or several such, according to the wants of the teaching; for, to imitate well, all the children must see equally the motions of the teacher. In some places are holes in the floor, used to secure blocks upon which unsteady children are forced into steadiness during the exercise, being unwilling to fall.

The development of the human voice being favored by the voice of instruments, there is a piano in the room devoted to purely vocal exercises. There, one child at a time, or many together, are trained to emit tones, short or long, high or low, single or by pairs, or in series. If this room be ornamented, its pictures must represent musical instruments, *bonâ fide* singers and even comical concerts. The articulation-room is more secluded, offering no distraction, not even through the unique window, which is rather high, and throws its bright light, not horizontally, but from above downwards, in order well to show the articulating movements.

Imitation relating to objects, or impersonal, requires a vast room. Closets alternating with architectural engravings and images of things to be imitated; very few seats, large tables, the middle of the room remaining unencumbered. In the closets are the pieces, carefully assorted, necessary for the representation of certain patterns hang-

ing on the walls, or near at hand. On some tables are geometrical blocks, whose forms stand next for comparison and adaptation. Other blocks of various sizes, most of them shaped like bricks, are piled up in out-of-the-way places, ready to enter into whatever combinations, whether of a few geometrically assembled on a table, or of a great many rising from the floor in towers, or extending in walls, houses, and circumvallations.

The education of the touch demands separate accommodations. The room in which it is done must be easily deprived of light, well supplied with closets containing a selection of substances, productions of art or of nature, whose characteristic properties fall under the control of the tact. When there is a want of room, the exercises of the taste and smell may be practised in the same place, though they do not exact so much attention as those of the touch, and may be favored by the sight of the pictures representing repasts, feasts, convivialities, fruits, flowers, and such-like; external elements of incitation of taste and smell, at best superfluous in tactile gymnastics.

Though auditory exercises are not all confined to a single room, we may describe only the principal one devoted to it. In it the child is spoken to, close by, and at various distances; directly from mouth to ear, or through the medium of hollow tubes, speaking-trumpets, etc.; or he is submitted to the direct agency of watches, bells, pianos: that room must be supplied for such emergencies. But it would be a poor teaching of audition to limit the sounds to one room; those first heard, because they are actually produced near the organ, must soon be

reproduced farther and farther from it, till instead of directly impinging upon the organ, they are to be gathered in the concha by an effort of the child's will. Therefore the pianos, violins, etc., playing in this room must, for some special teachings, have their tones continued by some similar instruments placed in the building, at graduated distances. Besides, the audition-room is the place for the ordinary training of that sense, by making the children appreciate, as in sports, the noises produced by the fall or the contact of various bodies, their own voices reciprocally, etc., without the assistance of other senses.

The gymnastics of the sight require more space, and cannot even very well be confined to rooms; but part of them demand the following accommodations. A place easily rendered dark and easily lighted by the removal of one or several blinds, whose displacement at once gives entrance to a large amount of light. To these windows may be adapted kaleidoscopic combinations, stereoscopic views, simple colors, forms, or letters, or striking images to be shown or concealed in a moment; the same room, lighted at will from above, to exhibit objects through long tubes and appliances, such as opera-glasses, microscopes, etc. And a gallery is to be fitted up near by, in which the bow and air-gun may be used, or which may serve as a croquet-ground or a bowling-alley. Once the look secured, the child is transferred to the room in which he shall systematically learn colors, forms, dimensions, and the combination of parts to form a whole. Here ornaments and decorations are not amiss; the walls are covered with rich pictures, to which reference may be had

when studying colors on cards, or with samples of cotton, woollen, or silken fabrics. Here too we see for the first, and not the last time, the narrow semicircular table, inside of which the teacher stands, while around it are the children. There are few chairs, and fewer unobstructive closets, running low along the walls, to keep the objects necessary for the aforesaid teaching, leaving plenty of room in the centre for moving and comparing objects.

Drawing, writing, reading, are taught in one room. Opposite the windows, the wall is entirely covered, at a proper height, with slate or composition answering the same purpose. On the sides are cards representing letters and words; the simple representations of the familiar objects named on the cards, and forming, with the words written on the black-board, the staple reading matter of beginners. In well-lighted embrasures stand also some of the ingenious machines for composing words. There are no more seats and tables than absolutely necessary for a temporary rest of part of the class. But in front of the black-board, there are on the floor painted foot-marks to keep the children at a proper distance from the object of instruction; and when these marks are not stringent enough, isolating blocks are put up, and the delinquent is expected to behave from the top of them. But immobility and attention are generally secure with less apparatus; as when children have their names conspicuously written on the board, or other conventional punishment felt more keenly than strangers might suppose.

A room, very similar to this, is destined for calculation. Besides the slates and series of balls of various colors set

on wire, there are collections of objects by numbers of the same kind, easy to aggregate or separate in groups at a bidding. To that effect more tables are provided here than anywhere else; all horizontal and circumscribed by a slightly salient edge, so that no object could fall. On these tables the four rules and fractions are taught with grapes, pears, marbles, nuts, etc., as thoroughly as by the most disheartening abstraction; they are transferred to the slate only when well understood. Here, at other times, assembling objects by pairs, series, similarity, or contrast, is rendered easy by the presence of numerous collections. Exercises of nomination take place also, in which the sight of objects provokes to language, and language in its turn spurs the lazy sight to recognition of objects: tedious exercise when it begins slowly, highly interesting when prosecuted with fire by a smart teacher followed by six or ten animated pupils.

The number of apartments occupied by the preceding and following trainings shall depend upon the size of the building. Collections made by the children themselves, and those of minerals and animals, or others that accrue naturally to an institution of this class, are expected to occupy large places; so that references and illustrations from them may be constantly at hand. The necessary distance of the institution from cities, whose streets and shows exhibit at all hours the true magazine of learning for the masses of the people, and the difficulty of sending idiots about to pick up by sight that which no book nor teacher can convey to their mind, renders more imperious the duty of making these collections as numerous as possible.

The objects gathered with the express view of giving object-lessons, do not need to be always in sight; but need careful arrangement and storage; where they may be found, and in such order that the qualities by which they resemble one another, or differ, be apposed in their resting-places; so that it may suffice to present them as they stand there, to exhibit to the children the vividness of their properties. The things collected to teach pricing are quite different. At first they are very few, and of the kind that the child cannot afford to live without. The appreciation of their value carries with it the use of numbers, scales, yards, money, and other elements of valuation: a knowledge of intrinsic value requires the gathering of more objects, a better study of their properties, and more sensorial discrimination. The collections made for that study must resemble in their arrangement, more than any other, the shelves of a store filled with samples of several qualities of everything that the child may be expected to need himself, and likely to call for afterwards. This room naturally becomes the place where qualification exercises may be carried to the utmost limit.

When room is scarce, we may put together, but never confusedly: 1st. On the higher shelves, the patterns of simple things that the children may occasionally have to execute in wax, clay, wood, etc. 2d. Somewhat lower, and easily seen but not touched, the standard toys, expansive, delicate, conveying more ideas by the sight than they would pleasure by handling. 3d. Still lower, within reach of prehension, the playthings proper, bright, cheap, and easily broken contrivances, which are so necessary to

the happiness of children, and from which they learn so much, even when destroying them.

A room sufficiently large to contain all the children and visitors, is used daily for the common singing, and occasionally for musical and other festivities. The care of ornamenting that room with fresh wreaths and new patterns of decoration falls to the more intelligent children of both sexes, under the guidance of a person designated for that duty by refined tastes and habits. This music or meeting-hall is the one in which the children dance or play together till the sleeping hour comes sooner or later, according to age and grade of intelligence; otherwise the girls and boys enjoy themselves in separate chambers and playgrounds.

The rooms in which dumb-bells, balancing-poles, Indian clubs, and the like are used, have their floors divided in one direction by straight lines, in another by rows of footprints, to mark the distances at which the children must stand not to hurt each other, and to help their classification. This room also serves for various imitation exercises, and opens, for more than one convenience, into the gymnasium.

This last contains the gymnastic apparatus proper; those essential to restore the muscular function, not to exaggerate it. It is, besides, the hall in which take place all the exercises and sports when the weather forbids their being carried on in the open air. For this vicarious purpose, the gymnasium must contain the various play-things in the same order as in an armory the arms are set up in racks; not for an idle display, but as standing pro-

vocations to desire and use them. Thus, with taste and show, are exhibited hoops, skates, sleds, balloons, ten-pins, kites, wooden and other balls, all arranged against the walls in attractive symmetry. Bows and arrows, wooden swords and guns, occupy in rows accessible positions, ready to be seized by the children, who need to learn the use of war implements; the determined attitude, the quick step, the firm grasp, the sure aim, etc. Even the fighting value of this military training in so feeble hands can be no longer despised, since two of the pupils of the New York State Institution went into the army of the Union, understanding very well what they fought for; one died of the fatigues of the campaigns; the other, wounded in two battles under Sheridan, died at Winchester. These things give to the gymnasium a character unlike to that of any other part of the building. Another peculiarity of its disposition is the gathering in it, and in the smallest compass, of all the difficulties which a child may accidentally find in his way, by establishing along its walls a system of up and down declivities and stairs, of artificial ditches, and of abrupt ascending and descending planes, over all of which the children, excited by music, by the voice and the animation of all the force of teachers and attendants, are unavoidably carried into a vortex of movement against the sluggishness of their own nature. When the weather is dull, chilly, thawing, the doors closed, the habitable world of the family limited by the gray windows, we mobilize them by a quick tap on the drum, a friendly one on the shoulder, a hand to support the trembling, a word to encourage the timid; on

they go, each one and all pushed, pushing, falling, raised up, laughing, crying, animated in their features and movements, as if they had never been idiots; till masters and pupils, eager for rest, are stopped, after ten or fifteen minutes of this wild chase, by the dinner-bell.

But happy the time when the gymnasium and most of the rooms can be vacated, and training and teaching may be transferred to the open air. There another and more natural school is prepared for them, and by their own efforts. Between some lofty trees, they have built and dug up with spades and wheelbarrows, walls, ditches, and race-courses strewn with obstructions, over which they are made to run, and from which they must extricate themselves. They have also raised stone or turf banks to sit upon under the shade in warm weather, and listen to the wonderful stories flowing from their teacher's lips. Thence they are sent in quest of specified natural objects, such as leaves, insects, flowers, etc., and they return, each one with his booty, a more intelligent countenance, and a happy face.

But all is not enjoyment in their lives. Next to the pleasant shades, the gardens and fields are open for more sober sports, which may be rendered as interesting as their destination is useful. The very youngest of the children are sent in squads to dig little holes a few inches apart; to deposit a precise number of seeds in each hole, without missing any; to cover the seeds with light dirt, etc. Later, being made familiar with the shape of a few leaves, they are sent in crowds to weed out from a large patch every green thing showing itself under a form different

from the one expected to grow on the spot. The hunting for insects destructive of vegetation, is another occupation rendered attractive by making the children conscious of the good they do, and by creating a gentle emulation among them for the number, the size, the strange appearance of their captures, etc. Soon these children become able to pave the garden walks with pebbles, or make gutters at their sides; they learn in short sessions the use of the spade, hoe, rake, watering-pot and others, according to their strength. Their implements should be light and efficient; this is capital; how many beginners have conceived for their work the abhorrence justly deserved by their clumsy tools. We will not follow our children, grown stronger, in the farm to see them helped by animals which they treat kindly, and above all, aided by nature. This is essentially the work for them. There, idiots are not exposed to crushing competition, but receive the concourse of the great Helper. Once, at the entrance of a poor man's field, was written, "The sun shines for all men." We read it many a time in our tender years without understanding it; but even on another continent, the sentence followed us, with its sun daubed in the middle, and we think that we understand it now; since we wish, we pray, that idiots may be kept working only where the sun can mature what they prepare: the sun of God shining for all.

Now that we have described the most important parts of the material institution, as the locality, or frame with many compartments in which the various acts of treating idiots take place; each room, nook, corner, hall and

ground having been shown with its object, it is easy to perceive the unity of the intellectual institution, hot-bed of physiological education for infirm children.

The intellectual institution is the living counterpart of the method. We discover in it the same flexibility of adaptation to all the physiological deficiencies, to bodily and mental weakness. In it the rotatory system is substantiated; we see the child moving from one mode of training to another, as in the method we could realize, his feeble mind led from one perception to another, and elevated, not by direct ascension, but by side-liftings and propagation of forces, as levers act on apparently immovable masses. The counter-drawing of the method is personated: firstly, by the children; secondly, by agents whose action upon them is as systematic as the method itself, though rendered fluent and easy by the train of affectionate impulse.

We shall first consider the children. Those forming the body of an institution must be idiots, of course; but among them are others rendered incapable of attending ordinary schools by various infirmities, and for whom no educational provision has yet been made. It would be useless to rehearse here the conditions of fitness of idiots and their congeners to the institution; we suppose that most of the applicants may be benefited in it, but we are obliged to acknowledge that their indiscriminate admission would impair the efficacy of the establishment, and we remark at once, that this would occur in two ways: one by the preponderance of certain sorts of infirmities among the admitted children, the other by their intrinsic

number without reference to classification. In regard to variety in the infirmities of those received, the pupils may be selected so that the institution has life in it, or falls upon itself like a dead weight. Therefore, in their admission, great discretion is to be exercised as to the number and the gravity of each kind of cases. If the bulk of them were affected with automatic movements, or incapable of auditing, or of comprehending orders, or affected with impeded locomotion, or prehension, etc., the predominance of one of these infirmities would act very depressingly, not only upon the individual treatment, but fatally on the onward and even movement of the general training of the mass of the pupils.

To constitute the broad and lower stratum of a normal institution for idiots, they and their congeners must accordingly be chosen in view of forming what we may be permitted to call an efficient body of incapacities. In this body the life, though defective, circulates and may improve, because the children have been apposed with regard to the representation in the school of the many infirmities characteristic of typical idiocy. In this wise the establishment is made to represent in the concrete, abstract idiocy, with its normal amount of incapacities and of quasi-aptitudes equipoised, so that it may be compared to a merchantman whose cargo is distributed for swift sailing. In general terms, if we want the institution to progress, the inmates must be chosen so that no special condition in them predominates over the others; but we must particularly warn any new establishment against three of them. 1st. Epilepsy, which too often

aggravates idiocy, ranks foremost. It is nearly impossible to forward the general treatment with the impediment offered by the sight and care of convulsions, impressing badly the other children, and consuming the available force of the *personnel*. 2d. Extensive paralysis and contractures, when largely represented, raise the same objection. 3d. The admission of many very young children acts in the same manner by the incessant care they claim, part of which hinders the movement of a public institution. The nursing required by so young pupils is not only the caring and watching day and night, so necessary to weak children, but it is the ceaseless fondling against a warm breast, from which the child seems to derive part of his vitality; and as idiots are, besides their infirmity, generally by several years behind other children, they need several years more of tender nursing and motherly care. It is better, therefore, as we said, to teach their mothers how to apply at home the physiological process of development, sooner than to admit them to pine away in the midst of apparently favorable circumstances.

In private and select practice, provisions may be made to avoid these inconveniences; but in public institutions, the general end to be attained must not be lost sight of for the sake of improving more especially a class of patients, nor even a set of functions in all of them. The school is to be filled by a choice of pupils whose collection shall form a unit easy to move, easy to command, easy to progress with the expense of a given force of intelligent persons. And by such judicious choice of pupils on the one hand, and of assistants on the other, the moral

being called institution for idiots is expected to be able to train her children up to the highest point of their possible attainment, instead of being herself dragged, by their dead weight, to their level.

Besides, to form a school, the children must be numerous enough to be worked successively into the various modes of general, group, and individual trainings. This minimum number must be attained to form anything like a school—even a private one. We would not say that, to succeed, there must be at least so many pupils in training at once; for it would be like mistrusting the miracles of individual ingenuity, or denying the power of devotion, money, scientific investigation, etc.; it would be like producing false evidence against ourselves, since we treated idiots by ones, by tens, before we gathered them for the first time by the hundred in Bicêtre. But we say that whatever may be gained by the close contact of one teacher with one or a few pupils in individual lessons, is far from compensating the loss experienced by the necessary absence of group or general training among isolated children. No doubt they may, in this wise, learn more through the teacher, but they will acquire less intuition by themselves; they will obey more integrally, but they will not act so soon, nor so well by the impulse of their free will; they may understand more, but will certainly do less. In fact, the two modes of teaching act so differently, and are so complete, not suppletive of each other, that the best school is the one which includes both; and consequently, a public institution must be numerous enough to permit a rational classification, with-

out reducing the groups to mere individualities. For this vital reason, it would be advisable to unite the means and efforts of two states to create a healthy institution, sooner than to foster several in deplete conditions, unfavorable to the circulation of activity among the children. But this rule must only be affirmed in its most general terms, and for public establishments.

If we are reluctant to fix a certain minimum of pupils for an institution, we must be more cautious yet in regard to fixing their maximum number. Evidently the more numerous they are, the more easy would be the formation of groups, if this operation needed not to be strictly founded upon a thorough study of the individual cases. Here lies the difficulty which may be stated in a very few words: how many idiots may be studied, taught, and treated with unity and comprehensibility, under a single head, by a staff of officers? We do not say fed, warmed, and kept at the lowest ebb of vitality; we mean educated and developed to the fullest extent of their capacity. Unfortunately, experience in this matter is too young to be invoked as a guide. Good common sense may help to form a judgment; but the question will evidently remain open till practice shall have verified or corrected our conclusions. If we consider, as we think we must, an institution as a unit in itself representing the pathological unit idiocy, we see that the children forming its body may be grouped for the sake of training as are the symptoms of idiocy, in various categories; though the same child will, of course, enter at successive hours of the day into several of these groups.

Muscular exercises will form at least five groups ; those of the senses and speech, eight or ten ; drawing, writing, and reading, half as many ; object-naming, specifying, qualifying, pricing, counting, about six ; the relation of actions to persons and things, expressed by verbs, prepositions, etc., the same number ; all told, without reference to outside labors, there would be above twenty groups of pupils to be formed, to fulfil by their collection all the physiological indications included in the treatment of idiocy. Granting, on an average, that a group formed for exercises of attention must not be composed of more than five children, and that one formed for activity must be under twenty, this gives us an average of ten children to each group. If we suppose the total number of pupils to be one hundred and fifty or two hundred, and a quarter of them always engaged in outside work, we have a maximum of one hundred and fifty pupils, forming fifteen groups of ten, under five teachers and three gymnasts, two groups to each, during six hours in the day. This gives forty-eight hours of individual or group training to fifteen groups, or three hours to each group. These three hours are given entirely to individual and group teaching, during which the child is expected to use his muscles, senses, and brain, alone or with the encouragement of a few mates doing the same thing. In the three other hours he is directly taught in the general training, or indirectly by being made a witness to the close activity and expressions of intelligence elicited from others, whose direct teaching reacts upon him in proportion to his nearness.

The efficiency of this indirect training is enhanced by

the capacity of the teacher for understanding what *nearness* means for every pupil, and in presence of every kind of exercise. These, viz. the best conditions of perception, are extremely variable. A very small child will scarcely pay attention to exercises of personal imitation performed by a taller one, above his head, but will not lose one of those performed at a suitable distance and on a level with his horizontal line of vision. Then, to give him a passive lesson of this kind, let us place him at the proper height and distance of a group of imitating children, and he shall learn often, from that stand-point, what our direct and protracted patience could not teach him. But this point of perception cannot be determined in the abstract; it varies according to the thing to be taught, to the sense to be provoked, to the size, capacity, infirmity of the child, and often to other anomalies to be ascertained by experience. Altogether, three hours given to direct, three hours given to indirect teaching, make twelve classes of half an hour each, through which each idiot passes, without reckoning his general training, active amusements, walks, etc. : the institution is made quite a busy place for children but lately idle.

The general training and pleasure exercises being taken outside of the class-rooms at different hours, during which the attendants are on duty, one attendant being able to take care of from five to twenty children, according to how helpless these latter are; they need not be more numerous than the teachers, if their charges are not too much crippled, or otherwise immovable. This number of one hundred and fifty pupils in actual training seems

easy to divide into natural groups to mass and to move. It is quite high, no doubt, if a man has to take all at once possession of it, individually and collectively, and to forward the treatment of each one and all, in an ascending march. But as it is not often that anybody is called, at short notice and without preparation, to such a duty, it may be asserted that with a previous knowledge of the old cases, a man of ordinary ability, well supported by his assistants, as we shall see he must be, will always be able to keep up the study of the new cases with the direction of the mass. Therefore, without fixing any number to the bulk of pupils forming the body of an institution, we must see that that body be not too heavy for the head, nor the head too light for the body.

Having given our views for what they may be worth, in reference to the selection of pupils and to their number to form a school under a single direction, we have now to give an idea of what may be considered as the motor, sensorial and intellectual, of the institution, with its attendants, gymnasts, teachers, and superior officers. We can do this better by a review of their daily contact with the children (in which the rotatory movement, systematically exposed above, shall find, by the by, its natural illustration,) than by a formal drawing of their abstract functions.

The attendants are the persons most constantly in contact with the children. To have one in each sleeping-room, the servants of all the departments are expected to do, at night, the functions of attendants. It is altogether a light duty, but one which teaches them kindness to the inmates who are the source, not to be lost sight of, where-

from employment and salary come to them. Those of that class whose other functions begin early, are allowed to room with the most intelligent children who require only a short watching when going to bed, and in the morning from five to six o'clock. The real attendants have to wash, clean, and dress the children from five to seven A.M., with what help they have taught the higher grade of them to give the lower. After this the pupils are amused and walked in, or out of doors by one-half of the attendants, while the others take their first meal. Before going to breakfast the children are reviewed, one and all, by the Superintendent. The attendants must repeat to him the verbal report they made to the Matron about the night, and give the particulars of what may have transpired since they arose. This morning examination is no light business to be trifled with, or trusted to half-competency. In another place we have shown it to be the first step towards the school-room, or out of it; here we present it in its relations to the daily regulation of food, diet, hygiene, and medical treatment. The verbal report of each attendant on sleep, cleanliness, and health during the night, and the morning written summary report of the Matron, are confronted with each other and with the actual condition of the children. Anything anomalous which has happened or appears at the visit, must be the starting-point of more minute inquiries, and lead to hygienic or remedial measures beginning precisely before, or with the next meal.

At the close of this morning visit each attendant conducts her children in small squads to breakfast, which is served in small rooms, and according to habit or to special

prescription. There again the attendant is alone, aided only by the more intelligent children, who feed with her the more helpless, or proffer other services. When breakfast is over the children are cleaned again and their physical wants attended to especially, so that nothing of the sort may interfere with the coming operations of the training. Then the attendants transfer the pupils to their teachers, and during school hours part of them take charge of the housework, part of the sewing, part of them are allowed to rest. At and after lunch, dinner, and supper, the same services are performed, after which the attendants accompany their charge, conveniently separated by ages and sexes, wherever the temperature permits. Here they are enjoined to not communicate one with another, nor work, nor read, nor sleep, but to be in direct communication with the children, making them happy and lively with playthings and simple devices; at least making the lowest walk, without leaving them drowsy and isolated. Some children listen to stories, some are prevented from injuring themselves, some are amused, some are gathered around a girl singing simple melodies. When the afternoon teaching is over the attendants take final possession of their charge, clean them again, passing through the same routine of duties, and after supper accompany them to the music, dancing, plays of some sort, by which the day is closed. After consigning the children to bed the attendants may assemble for an hour or two of conversation, private sewing, etc., previous to resting themselves from their arduous duties. These have been arranged so that from

morning till night every attendant has been in active service ten hours a day, almost all the time near the children. These indeed are trying hours, if we consider the responsibility of the station, and the kindness to be used as sole agency of obedience to orders, and of training to the habits of social life. The attendant cannot be empowered to punish or coerce children, but to help and incite them only; hence the necessity of choosing for that function women very kind, gay, attractive, endowed with open faces, ringing voices, clear eyes, easy movements, and affectionate propensity towards children. These are their only but real power; when it fails they have to refer to their presumed superiors in intelligence, and to borrow of them an authority which cannot be exercised but with a complete knowledge of the physiological anomalies of each case. Thus is spent the time of these good women, who attend to the idiots much in the same manner as the monks of Spain of yore, and the farmers of Ghel later, took care of the insane, with little science, but a great deal of charity.

They have been followed all the while by the Matron, who sees that everything is right at bed-time, in the middle of the night, and in the early morning. When the first bell sounds, it is she who goes from bed to bed, making sure that the sick are not taken out and bathed to satisfy the uniformity of the rules. She soon knows who has been clean, quiet, orderly last night; and who is qualified or not for the occupations of the opening day. Thus she controls and confirms the correctness of the reports of the attendants; at the same time that, by her

presence, she exacts that the children be treated in these trying hours as she would treat them herself. It is out of our plan to follow her in the exercise of her general functions, which are so well understood. But idiots require a very different sort of maternal attendance from that needed by other children gathered for charitable purposes. As soon as the orders resulting from the morning visit are received, she sees that they are carried into execution. In the infirmary she attends to the application of such dressings, and to the giving of such medicines, as the children may have been ordered; and at meals she directs that the prescriptions relating to individual diet are punctually executed. She never allows the children to go out without seeing that each one is clothed according to the peculiarities of his constitution and the temperature. The feet and hands are the objects of her greatest care in creatures whose circulation is mostly sluggish or impaired at the periphery. When they return she should look at each, to see if any one has fallen, hurt himself or others, coughs, or suffers in any way. In this kind of duties, of which we give only a few specimens, the matron's rôle is active. At other times her action becomes nearly or entirely silent or passive; as whenever the children are engaged in their various avocations with the teachers and gymnasts. There, without saying a word unless for the most urgent reason, she passes, remarking which among the many countenances become weary, exhausted, listless; she notes these for future observation, unless the uneasiness becomes so great as to call for immediate interference. She presides at the

festivities among the children ; at large parties, or weekly music or dancing, or daily evening pastimes, of a pleasant and informal character. And when the children have been put to bed under her eyes, sooner or later according to ages, she has not yet made them her last visit before retiring to rest herself.

The Teachers begin their work together by leading the children in the singing exercises of the morning ; after which they go to their respective rooms, into which they are followed most willingly by the pupils, very few of whom need be directed to their proper places. Each teacher has a programme of lessons and a series of groups of children ; both adapted to each other in the table of movements of which every one has a copy. By this table the teachers are allowed the same variety of exercises as the children in respect : first, to the teaching, so that two successive lessons shall not employ the same set of organs, nor exact the use of the same intellectual functions ; and second, to the persons, by changing, relatively, children and teacher at each lesson, thus preventing the moral fatigue which results from protracted and often unsuccessful contacts of obedience and understanding. But the teacher has many other things to do besides teaching. She first places the children, as they come each half-hour, in presence of their lessons, far or near according to their wants, or to their individual capacity for immobility, attention, perception, etc., or to the active or passive groups to which they temporarily belong. She takes note of the impression made on the health of every child, pushes or stops an exercise according to the

depression, or more rarely to the exaltation it causes : never aiming at imparting so much knowledge, but at exercising such functions to such an extent. These and other accessory cares exact a great deal of her mental power and vigilance, besides the fatigue of teaching proper. After six hours so employed, in close contact, we nearly said combat, with the intellectual infirmities of her pupils, the teacher is scarcely expected to fulfil any other serious duties towards them. Nevertheless she must direct them in their excursions, gathering insects, leaves, flowers, anything, by sort or kind ; and help them to arrange these in collections ; and she has, besides, a busy hand in all the representations, charades, dancing, extra and regular evening pleasures of the family. When she retires, it is yet her duty to note anything particular which has transpired about the children, or any remarks of hers upon the teaching, suggested by her own experience of the day. These notes cannot be confided to fugacious memory, but must be written in a durable form and laid like the material for the foundation of a better edifice than the present method is, after having been discussed in teachers' meetings, and submitted to the repeated tests of experience.

The gymnast, though a teacher also, has functions which differ, if not in their material mechanism, at least in some particulars, from those just mentioned. His lessons are more neatly divided into general, group, and individual. More than the teacher, he must be assisted by the more intelligent and willing pupils, because he may command with his single will many movements, but can correct

only a few wrong ones with his own hands. Here the help of idiots is doubly precious, since it trains the movements of the lowest by the training of the intellect of the highest ; the former learning to imitate, the latter to reason the imitation, besides developing his will ; clumsy as these helpers look at first, they are valuable and soon become precious. The gymnast seems to need, more than the teacher, the quality of judging the point at which each exercise must be carried by each child, to be physiological and safe. He must know that point, strive to attain it, feel it, and there stop : in this lies his talent and the safety of the children. He is besides called to direct the out-door sports, whose apparatus is changeable according to temperature and locality ; to lend a useful hand to the pleasure-parties of any sort given to the children ; and is obliged, like the teachers, to write out *in extenso* his observations on the children, and on his part of the training.

As the Housekeeper takes charge of the girls as soon as they are able to learn practical housework, so the steward has the management of the boys in the garden and fields ; whilst all the persons working in the Institution are expected to lend their assistance to the training of the children in their special avocations. To sew, garden, or wash for the establishment is well enough ; but to help the children in doing the same is better yet : in fact, everybody here must be ready to turn into a teacher of idiots. The duties of the steward, in particular, are important ; as in relieving the Superintendent of many gross cares, leaving him more time for his intellectual func-

tions. But our delineation of the Institution is too general to admit of following any one of its officers but in their direct action on the training.

But so many persons are not expected to act in such close concert of time and purpose, without conforming their conduct to a plan strongly framed, the conception of a single head. The Superintendent is or should be that head. He is supposed to be prepared by special studies to confront the important problems enclosed in the yet mysterious word idiocy. His functions are many; more, we think, than he can well perform.

He has to manage delicate relations with the Legislature or corporations to insure the financial existence of the institution. He has to keep open general and private communications with the public, and with the families of idiots: most parents needing to be educated to the point of understanding what their children are, and what may be done for them. In these respects he can scarcely do too much; since here, after fifteen years of voting, paying, printing, lecturing in favor of idiots, and notwithstanding the practical training of above five hundred pupils by State munificence, nine-tenths of our well-educated population, and more than one-half of physicians, ignore the very existence of the New York State Institution at Syracuse.

Two other points require his special attention. When the parents of idiots have become familiar with the object of the school, he must make the mother understand the advantage of her coming with her baby often, to be advised on her future course, to see what training she can

pick up and carry home, to not allow idiocy to be aggravated by inactivity. And he must take advantage of favorable incidents to sound the truth as to what she considers the circumstances which had an influence on the anormal condition of her child. All she says about it must be recorded, probable or unlikely, simple or monstrous, vulgar or supernatural. Time alone can permit a judgment, not upon hundreds of such sayings, but upon the comparisons of thousands. Provisionally these records are allowed to sleep in their annual and alphabetical order. But when the subjects of them become older, and application is made for their admission, these notes are confronted with the actual status of the grown child; double foundation, copious and minute elements of a future monograph. In this expectation no pains must be spared to give the second report the fulness and clearness it requires, to be used as the starting-point of a scientific observation. In it the Superintendent insists upon the circumstances of locality, hereditary constitution, parentage, alliance, conception, gestation, labor, lactation, impressions of the mother and nurse, dentition and infantile ailments, early or progressive backwardness of the vital manifestations, closing by a thorough description of the same at the time of writing. The Superintendent who interrogates the parents and asks from the functions of the child an answer on all these points, begins to possess his subject. What the family or child cannot tell, his means of investigation shall reveal. Next, the functions of organic life are analyzed; heat, respiration, circulation, blood, urine, saliva, sweat, fæces, are submitted to

the tests of the new senses of observation and comparison created by the use of chemical reagents, the microscope, the thermometer, the stethoscope, spirometer, dynamometer, etc. The child is weighed, measured in his diverse proportions; his capacity for endurance and activity is tested; his powers of intelligence and speech are ascertained; his will and habits delineated; a pen-and-ink portrait is drawn of his whole being, and kept together with his photograph, as witnesses to the point at which he began to be taught. Then the Superintendent, with a perfect knowledge of his subject, may launch him among the other children, not yet as an accepted pupil, but as a probationer on an experimental treatment of observation.

Therefore the Superintendent must have an absolute understanding of the children. Others may be more familiar either with their habits, capacities, or peculiarities; but none must know them so completely as himself. Then come what may, resistance, obstacles in the training, etc., he knows what to believe and who to distrust, and can truly superintend the work. This possession of the character of his pupils and of his subordinates is the store which supplies his capacity; out of it he draws his best resources for the accomplishment of his subsequent functions.

The most important of them is to take the lead of the school movement; operation by which the children are distributed in efficient groups, and in which sufficient exercise of each of their functions is apportioned to every one of them. He follows throughout the general training the impressions made upon the health, progress, habits,

of every child; from which he deduces the propriety of continuance, change, or simple modification, either in the nature, length, or intensity of the multiform objects of training. It is very difficult to understand how he can delegate this duty for any length of time, without losing the meaning of what is done in his name; or how he can relinquish it entirely, without assenting to a potential abdication.

This active observation is particularly required for the new pupils received on probation. Before their final admission these children are to be studied in diverse aspects. Being generally undersized and brought up in inactivity, they are not expected to be as robust as others; though not more sickly than the average; but more than the average, afflicted with epilepsy, paralysis, chorea, or secondary affections considered as obstructing the channels leading to improvement. At any rate, any one of these infirmities superadded to idiocy cannot improve it. However, the Superintendent is to call discretion and discrimination to his aid in the appreciation of the character of both ailments. Is idiocy primary, or consequent to, or simultaneous with the other affection? Does idiocy aggravate the other disorder, or is the reverse true? Does idiocy require a treatment entirely opposed to the cure of the accessory disease? Or does the accessory disease need to be cured prior to treating idiocy, or *vice versa*? What impediment or what help may the treatment of one bring to bear upon the issue of the other? What influence may the accessory affections of one or of several children have upon the general training,

or upon the nervous, imitative, or intellectual faculties of an undetermined number of pupils? Will these accessory infirmities act by contagion, example, or like dead weights on the institution? These questions are not of the kind for which written answers will do; each case containing its own solution, to be read from the symptoms, as they are evolved during the process of observation.

Another point to be studied in the new pupils with no less attention, but of more general import, is the relation of their need and power of assimilation to their deprivation of force under the friction of newly imposed labor. Prior to entering in training, these children derived a bare sustenance from their food, abundant or scanty, rich or meagre. In their new status they will need food; 1st, as previously, to support life; but besides, 2d, to furnish the elements of a larger growth; 3d, to increase their vital powers; and 4th, to spend in their new activity. Who will not admit that great change must be made in the food, and great change must take place in the result of feeding, to obtain great changes in the constitution, habits, and functional manifestations of the new-comer? And who does not foresee that if the use of the best means of nutrition does not go further than feeding the idiotic constitution in the idiot, he will never emerge from idiocy? Therefore the first struggle between the Superintendent and his pupil does not consist in showing him letters that he will not look at, but in generating by food and hygienic measures a given force to be spent and renovated in increasing ratio: *this* is the A, B, C. If, in spite of these

means, he does not gain, or actually fails, in his strength during the period of observation, Nostalgia has taken possession of him, or he has entered into his age of senility, which begins for some idiots at the time ordinarily marked for virility ; or he may be impervious to any of the modes of rejuvenating the circulation. Prudence reserves the final decision on the nature of the causes of this failure ; whilst observation notes, calculates, weighs, measures the vital forces ; and if these tests show any gradual decrease under a treatment intended to invigorate, the child must be turned over to the parents, at least temporarily.

But how could we restrict to the new pupils this double survey of the effects of food and diet on the forces, and of the influence of the production of forces on the treatment ? Does not every pupil every day require the same watchfulness ? Does not the whole movement of the institution depend upon the sum-total of force produced by the regulation of said equilibrium ; and does not the Superintendent stand in regard to this harmony, in the same relation as the engineer in regard to the proportion of heat to steam, of steam to weight to be displaced. In this respect he will not allow himself to be imposed upon by reports of ignorant subordinates, or by written prejudices.

The products of alimentation being the ultimate means relied upon to raise the children from idiocy, they must be fed, not to be filled, but to produce by nutrition the desired force. But so far, any interference of science in the arts accessory to feeding have produced only sophistication and crime. Erostratus was a saint next to the chemist who has taught millions how to adulterate wine and bread,

the two staples of civilized life. The theoretical division of food into nitrogenized and non-nitrogenized is not so firmly established as to authorize a Superintendent to risk upon it the future of his children; and the uncertainty of other hypotheses must satisfy him conclusively that alimentation is not a science but an art. Of this art we know thus much. Nourishment is the result, not so much of bulk, as of variety; the reason of this is, that man is omnivorous. Consequently, that which nourishes the most is not always the richest food, but the one most relished; because being desired, it produces an abundant secretion of salivary and gastric fluids, by which the food is more thoroughly assimilated than when it is indifferently swallowed. Another consequence of this remark is that, setting apart the cases of perverted tastes or Pica, the children themselves are pretty sure judges of what is good for them; and will tell it to any one who will take the trouble of reading their tastes on their countenances while they eat. As to quantity, they are not so good judges, their appetite often wishing more than is required by their appetite; this is a matter to be regulated by experience.

But the future of the children does not depend only on their feeding. Seasons, epidemics, accidents, individual deficiencies, bring their unavoidable share of sickness—of death even:

*“ Et la garde qui veille aux barrières du Louvre,
N'en défend pas les rois.”*

But disease or impending death comes rarely upon idiots in the open manner in which it ordinarily assails men. They feel it more by a negation of feeling than positively;

so that questioning them is useless, and their answers, if they can speak, are deceptive. In this emergency, nothing will do to settle the diagnosis, if not precisely as to the disease, at least as to its lenient or dangerous nature, so well as the use of the tests of vital forces already referred to.* It is not in our plan to follow the idiot to his sick-bed; the Superintendent who does it, knows more than we do on the subject. One thing only we mark: let us remember that in sickness as in health, the idiot is always laboring more or less under his primary deficiency of nutrition. But constant reference to the state of heat, circulation, and respiration, will warn against the danger of asthenia. We do not mean to say that the Superintendent is to put these tests aside as soon as life is no longer in peril. We mean, on the contrary, that he must use them for all the pupils. These vital tests and the chemical, microscopical, and other examinations of the condition of the functions and secretions, are to be made and recorded monthly, and oftener in special cases.

But the use of scientific appliances does not dispense the Superintendent from measuring also the vitality of the children by the physiological standard of their activity; to see whether they sleep, eat, play, study, labor with a healthy soundness, or show traces of languor or restlessness in what they do or refuse to do. If these two kinds of evidence coincide in their indications, they call for due hygienic interference and instant modifications in the training. Thus the Superintendent keeps his eye fixed

* See Aitken on Wunderlich's practice; and E. C. Seguin on the New York Hospital practice, in the Chicago *Medical Journal* for May, 1866.

upon the pupils, and his hand as if he were constantly feeling the pulse of the institution.

However, many other things are to be done for the children by others, and yet with a unity which can but proceed from him ; and he cannot impress on the mind of his assistants the direction of his own, without giving much time to their training ; be they, or not, experienced teachers, matrons, attendants, or others. He must give them his plans of treatment to be carried out, and they must impart to him their daily experience in the progress of individual training ; this interchange forms their bond of union. By this constant exchange of views from the general to the special, the Superintendent is not in the least exempted from controlling the teaching on the spot. There he will find that after years of experience, the best teacher may act contrary to the laws of physiology, and he may surprise himself learning new things in his art from some peculiar incapacity of an idiot.

Besides, he endeavors not to spend an evening without having some informal conversation upon the topics of the day, advising changes, provoking verbal or written expressions of opinion from his subordinates. In this constant intercourse familiar suggestions take the place of orders, plans are laid for future labors, and materials are accumulated to keep up the interest of the monthly meetings. These meetings, central points wherefrom radiate the views of the Superintendent, are occupied by the reading of the reports of the family, of the girls and the boys drawn up separately, of the school common to both sexes, but distinct as to every part of the training.

Attention is called by the Matron and the more intelligent attendants upon domestic matters, and by teachers and gymnasts upon new points pertaining to the training. Extra tasks of observation are assigned to competent parties, changes are prescribed, and new orders given, closing by the reading of short essays on the various incidents of the last month's labors, health, etc. Very few, if any, of these essays must assume the tabular form, in which children, habits, progress, exercises, are reduced to figures. On the contrary, it is desirable that they be intimately connected with the treatment of specified individuals, even with a very limited part of it, provided the observation be thorough. These fragments must be classified with the other documents pertaining to the history of the same child, and will be found invaluable for the formation of monographs.

Every year the Superintendents of the various schools for idiots should meet, to impart to one another the difficulties they have encountered, the results of their experience, and mostly to compare the books containing their orders and regulations. These books, the embodiment of the past and future life of the institutions, are not so much the personal property of those who fill them with their creative and organizing genius, as that of society, which lavishes money upon the schools, not only to improve idiots, but to spread the means adapted to their improvement. In the same spirit the Superintendents might agree upon a system of temporary exchange of teachers and attendants. This would be very beneficial in grafting from school to school certain peculiarities of

training nearly impossible to transmit by writing, and would offer pleasant change and relaxation to trusty officers after faithful and protracted service.

Then the Superintendent should consider the important questions relating to the propagation of schools for idiots where they may be needed; to the creation of *asylums* proper, in which adult idiots, left friendless or imperfectly improved, might find a happy home; to the opening of special hospitals in which choreic, epileptic, and otherwise nervously affected children might be treated, instead of being, as actually they are, a dead weight upon the institutions. This enumeration only opens the series. In regard to the theory and practice of their art, they should ascertain the precise point at which stands their own knowledge of the nature and origin of idiocy; their skill in diagnosis and treatment; and the elucidation of the physiological questions involved in the theory of the training. After these and kindred queries have been answered, or proposed as problems to be solved at future meetings, they should consider the relation of their art to the scientific world. Few and perfect monographs are to be issued from time to time; the publication of works upon some analytical points of physiological education is to be encouraged; public lectures on the less abstruse points of the treatment of idiots might be tried; and a pecuniary interest taken in a *Medico-Psychological Review*, in which the ideas and the tendencies of the school might be advocated. The physicians to the insane have to be shown that, next to the moral treatment handed down to them by Willis, Pinel, and Leuret, the physio-

logical training that has been so far restricted to the treatment of idiots, may accomplish great things in the way of correcting false ideas, and particularly perverse sensations in the insane. Finally, at these meetings some means must be devised to make common-school teachers familiar with the *ensemble* of the resources offered by the physiological method to develop harmoniously the whole being in our children.

It is thus apparent that great responsibilities rest upon the Superintendents and upon the trustees who employ them, in carrying out the immediate and remote objects of the foundation of schools for idiots. Narrow eagerness in the pursuit of some points in the practice; remissness in analytical inquiry; neglect of the synthetical problem of physiology; dropping of the scientific and social corollaries already issuing from the doctrine of physiological treatment and education; such are some of the evils which may bring down a school for idiots to the level of a richly endowed poor-house.

Happily these warnings are founded more upon that difficulty, inherent to human nature, by which we are incapacitated for fully carrying theory into practice, than upon any positive symptoms of decay in the young institution. It looks healthy and vigorous; it spreads far in lands where freedom is cherished, and deep in the hearts of those who first acknowledged their bonds of brotherhood with the suffering many; it rises in solid reality among the monuments of learning and benevolence; it arose as one of the mature realizations of the gospel on earth, that nothing can destroy; it wanted only a better

exponent of its principles; this insufficiency we have kept in mind, though it is mitigated by the consciousness of having once more accomplished our duty towards our Master, our pupils, and a holy idea.

APPENDIX.

NOTES,

REMARKS, SKETCHES, AND PARTIAL OBSERVATIONS COLLECTED TO FACILITATE THE STUDY AND ILLUSTRATE THE TREATMENT OF IDIOCY AND ITS CONGENERS.

OUR subject needs illustration as much as any one treated of in text-books ; and it would not have marred it, if we could have interspersed its pages with profuse and correct engravings of children, apparatuses, school-rooms, etc. But as its most important parts are of a purely intellectual nature, as descriptions of features, countenances, defective or effective functions, the delineations of a truly philosophical artist, armed with the surest burin, could hardly have expressed the most material aspect of these idealities, leaving yet to the writer the task of depicting the mind. Therefore we dismissed, for the present at least, the idea of asking the help of an engraver, and relied upon the pen of our friends and our own to fix durably the multiform or typical characters of our subject. And however defective may appear these sketches in an artistic point of view, we hope that they will be perused by the persons who love the idiot, and have devoted their life to his improvement ; because the study of the cases here presented, even imperfectly, will open the comprehension of all others.

It seems quite appropriate to begin these sketches with short notices of cases in which the condition of the child

has been, justly or not, attributed to certain circumstances which happened at the time he became idiotic ; circumstances, therefore, considered as causes of idiocy.

Heredity, as a presumed cause of idiocy, is well exemplified in the case of H., with his brothers and sisters, soon to be given as a type of hydrocephalus. (See Observation XIX.) But hereditary degeneracy does not always follow in a family a gradual progression. Far from it. Other things being equal, we find the low types of humanity rising, and those arrived at their perfection rather degenerating, not by a slow degradation but by a sudden fall ; particularly when the mother is the one which has attained the acme of perfection, or surer yet when both wife and husband have. At this stage of human elevation, if the race does not become extinct, it is continued by some fine children, among whom one is found idiotic, paralyzed, or subject to contractures ; or the whole stock is tainted in various ways, every child bearing a particular mark of the degradation. The case of Emma N. (Obs. XLVIII.) is of the first class, and the following shall characterize the second.

OBSERVATION I.—We attended in France a family whose heads were truly types of perfection : the woman for beauty, grace, and intelligence ; the man for male vigor, cunning, and far-sightedness. They were, apparently, blessed with children worthy of themselves ; for excepting one girl, whose beauty was altered by a varicose condition of the capillary network of the face, all the others appeared well, and were certainly charming ; the whole family in a carriage looking like a rich bou-

quet of select flowers. But to look at them more closely, one tall girl in her tenth year had one leg shorter and thinner than the other, difference whose increase could be stopped, not outgrown ; another sister gave unmistakable signs of tuberculization ; whilst the freshest-looking of all was secretly a prey to epilepsy. At first it was a simple twitch on one side, soon the face became involved in the spasm, and finally the disease was, or appeared, incurable. Its effects on the body made the affected side weaker, and on the mind left a backwardness which subsequent and stronger attacks might convert into imbecility or dementia, with more or less paralysis.

OBS. II.—Mrs. D., a very refined woman of temperate habits, was no sooner pregnant with her fourth child than she began to drink one quart of brandy a day, and continued to do so, her head being never affected, till delivered of a boy. Though she and her husband were remarkably swarthy, her child was pearly white, with the lightest red hair, and idiotic : she never touched brandy since.

OBS. III.—Mrs. T. did not care whether she married or not ; but as soon as she was with child, she felt a strong antipathy for her husband, looked for all sorts of excitement, even of the most ferocious and brutal character ; and would stare for hours at scenes once perfectly repulsive to her educated and normal tastes. At such times, nothing, even hunger or shame, could detach her eyes from the horrible, even bloody sight ; and she felt at the time as if this monstrous craving was exacted imperatively by an abnormal state of the womb acting like a stranger's will

in lieu of her mental volition. This state lasted till a girl was born, large, fleshy, healthy; but whose condition was very exceptional, to say the least of it. At eleven years her health was florid, her flesh immense, her form woman-like in every respect; she had already menstruated after several hæmorrhages endangering her life. Morally she is ready to be led astray by any one, anywhere, without any idea of right or wrong, but by a natural propensity; otherwise, she is affectionate in the proper direction, and loves dearly her younger brother. Mentally, she is extremely simple; can scarcely read, write, or count, has no perception of colors, nor of any other properties of bodies. She cannot be trusted to cross the street, to set a table, to do anything; though she is more than strong—powerful. She, upon our advice, entered recently one of our institutions; with what result, remains to be seen.

OBS. IV.—“A little girl five years old. She was bitten by a rabid cat in July, 1847, being at that time one year and nine months old. Previous to that time she was a healthy child, and intellectually forward for one of her age; talking a good deal and very distinctly. Soon after the bite, she was taken with diarrhoea and vomiting, which lasted six weeks, during which period her voice changed, and the sore on her face occasioned by her bite reopened. On the disappearance of these symptoms, she was taken with violent convulsions, continuing for twelve hours. Her face was afterwards red and distended, and her eyes possessed an unnatural glow. For the three following days, she had all the terrible symptoms of hydro-

phobia; tearing the bed-clothes, and attempting to bite those around her; unable to bear the sight of water, and also to swallow any, together with a frequent recurrence of the spasms. At the end of this period, animation was suspended, and to all appearance she was dead. At the expiration of half an hour she revived, but with returning spasms; not, however, as severe as the previous ones. These continued for more than twenty-four hours, when it was found that she had forgotten everything previously acquired, and had lost the power of speech. In a few weeks she gained strength to walk, and then walked incessantly during the day for five months, disregarding everything. She continued to have spasms occasioned by fear, as at the sight of a dog or cat. She remained in this condition for fifteen months, not recognising her own parents, ignorant of her own name, and utterly incapable of imitating anything. From that time, owing to a change of medical treatment, she began to improve in her bodily health, sleeping well by night, though still very restless by day.

“She came under my charge not quite two years ago, a child of prepossessing appearance, of wonderful activity and fearlessness (to such a degree, as to give currency in the village where she resided, that she had received by her bite some of the feline nature), of a sweet disposition, and with her intellect only needing to be brought under the control of the will, though without the power of speech. She had a great imitative faculty, and tried to talk, but had lost control over the muscles necessary to articulation.

“She is now much more quiet ; understands everything that is said to her ; can distinguish colors ; has learned the names of many objects on printed cards, speaking the names of a few of them ; she can put away all the letters of the alphabet in their places on a letter-board, and is beginning to learn their names. In the matter of articulation, her progress has not been as rapid as I anticipated, owing to the apparent paralysis from her hydrophobia, but from the success I have already had, I do not hesitate to predict that she will yet learn to speak. No one who has visited the school will fail to recognize the subject of this description, or, I think, to trust in the fulfilment of this prediction on my part.”—(Dr. H. B. Wilbur’s Annual Report of 1853.)

OBS. V.—“Ed., brought to the New York Institution when seven years old ; could not walk from paraplegia ; legs very dry and small, contracted inwardly ; body undersized ; head proportionate ; eyes good, but rather flashing in every direction, with a sickly brightness. Could talk but after three years ; has yet a defective speech ; is very fond of music ; highly excitable, easily calmed ; begins to learn satisfactorily, and to walk with a support. He is said to have been a seven-month child. His mother ascribes his condition to her own moral impressions during gestation, mostly to fright.”—(Dr. H. B. Wilbur’s Reports.)

OBS. VI.—Mrs. B. came out from a ball-room, gave the breast to her baby, three months old ; he was taken with spasms two hours after, and since is a confirmed idiot and epileptic.

OBS. VII.—In a moment of great anxiety, Mrs. C.

jumped in a carriage with her suckling, a girl of fifteen months, so far very intelligent and attractive. The child took the breast only once in a journey of twenty miles, but before arriving at destination she vomited several times, with no other interruption than that of coma; and after an acute fever, the little girl settled down into the condition of a cripple and an idiot.

OBS. VIII.—A., a child three months old, presented a strange disparity of both hemispheres; the left being more forward than the right. The right occipital and posterior part of the parietal bones were flattened, flexible under a moderate pressure; the integuments rosy, sweaty, denuded of hair; there was constant drowsiness; child looked exactly like an idiot. But it being noticed that the child was put to bed always on the flattened side, the reverse was prescribed; and soon being laid every alternate day on each side, he became lively, and his head assumed normal conditions of shape, resistance, and color, in about three months.

OBS. IX.—Br., whose head was encased during half a year in a narrow, pointed flannel cape, which did not grow larger by washing, had a few convulsions, which were treated, and apparently cured, only by removing with that cape the pressure it caused on the head, which soon lost its pear-like shape, and his eyes their squint.

OBS. X.—Mrs. H., ignoring that she was with a second child, continued to nurse with her own milk her first-born. This one, eight months old, from rosy became waxy; her head seemed to grow larger, and a few months later it measured 26 inches in circumference: the nutrition of the

second child preventing that of the first, and hydrocephalus with idiocy followed deficiency of nutrition.

OBS. XI.—Mrs. C., nursing a fine boy when she was suffering from intermittent fever, he became choreic and idiotic.

The measles, hooping-cough, scarlatina, and other infantile diseases seem many times followed by the same deficiency of nutrition, which in some manner arrests the development of the nervous system and produces deafness, cæcity, paralysis, contractures, according to some unknown idiosyncrasy, and idiocy or imbecility according to the age of the patient.

The circumstances above presented, mostly by parents, as causes of the idiocy of their children, are not here endorsed as such; but offered to increase the collection of hypotheses on the subject, and hasten their rejection or final admission among the scientifically acknowledged facts.

Our last task being to show idiocy in all its modes, we shall begin it by the description of a child who might be offered as the typical idiot.

OBS. XII.—Emma was brought, for she could not walk, when eight years old, into the experimental school at Albany. Neither standing, sitting, nor lying, but somewhat reclining in sunken postures, she had some feelings, but no control over her muscles. In proof of which, if she was pricked with a pin she would scream, but not remove the interested part; or one could put a finger upon her eyeball, and she would not so much as wink to escape that touch. She had not will enough to grasp

anything in her hand, nor to move her head, and no mind to use her senses like a baby three months old. Her only willed movement consisted in throwing herself violently backward and balancing her head when in anger. She did not speak a word, but had been heard to hum a portion of a popular melody; she had but few feelings, it was said, but had a taste, and quite a peculiar taste too; for she would eat nothing but sponge-cakes and drink nothing but weak tea. If anything else was offered to her, she would give utterance to the loudest screams. But even that precious cake had to be placed at certain hours of the day in the back part of her mouth to be sucked down, in the total absence of mastication and deglutition. She was also absolutely unclean and impotent. In these last respects her want of voluntary movement was so complete that it absolutely simulated paralysis. Her senses were useless, except the taste, which we have seen limited to the appreciation of a single object of nutrition. Her voice was never articulated; her instincts and intelligence were greatly inferior to those of most animals; she could do nothing, understand nothing, and willed nothing, except when wanting sponge-cake.

Let us now see what Dr. Wilbur did for her, and through her for the progress of our art. He says: *
“Let me briefly describe the stages in the calling forth of the voluntary motion and sensation. I commenced then from the known. In the case of Emma it was nearly

* Some Suggestions on the Principles and Methods of Elementary Instruction. By H. B. Wilbur, M.D.

confined to sensation in the back part of the mouth. With a piece of sponge-cake on a fork I drew gradually (as in successive lessons) the sensation of taste forward on the tongue, then to the lips ; desire, prompted by appetite, followed close to the heels of sensation. Soon I was able by touching the lips, the mouth at its sides, and above and below, to make her reach her head forward, to turn it herself from side to side, and up and down, in pursuit of the desired morsel. The sense of smell was somewhat educated meanwhile, and she also raised her head for the same purpose. Occasionally, when she failed to get the cake through my impertinence in drawing it away, she drooped backward with a discouraged air. In the exercises here hastily sketched I had accomplished this much ; master and pupil were brought into a conscious relation. Sensation was extended ; voluntary motion, to gratify the appetite, was induced.

“ I wished now to secure voluntary effort in the way of balancing herself, as a preliminary to marching and standing alone. Placing her in an erect position, with her back against the wall and her feet on an oil-cloth, and sitting myself on a chair in front of her, I held her body up with one hand, and with the other kept her knees from bending ; her whole weight was thus thrown upon her unaccustomed limbs. Then guiding her feet with my feet, I allowed her to slip forward till her position became quite uncomfortable. After a few moments I restored her to a more comfortable position by pushing back her feet. This was repeated for some time, till to my joy she took the hint, and, to relieve herself, slightly

drew back one foot. 'Now, miss,' I exclaimed, 'your education in locomotion is begun, rest for to-day.'

"In another lesson or two she learned to step backward continually and regularly, then sideway, then forward, then in the baby-jumper, where, for the sake of comfort, she had to learn how to make voluntary efforts to stand on her legs. With such and similar methods she learned to walk, to stand, and to sit down, etc.

"I now wished to put her hand under the control of her will. Holding her wrist, I placed in her soft palm (for she made no effort to grasp at anything) various objects hot and cold, smooth and rough, light and heavy. She at last knew she had a hand. After a while I succeeded in inducing an effort (voluntary on her part), not to grasp the object, but to drop it by a slight motion. This I encouraged till she positively dropped it at a time I thought that she perceived a connexion between the dropping of the body and the noise and jar as it fell at her feet, assisted perhaps by my simultaneous explanation. Acting upon this, and with the impelling influence of my stronger will, which she now began to appreciate, I at last secured the end I had in view, and she held whatever I gave her. I should mention that heavy bodies are held more readily than light ones."

Here is from an experienced hand the representation of the struggle against the ultimate inertia of idiocy. For in this duel, simple as it may appear, are included the most difficult problems of the muscular and nervous training, besides the demonstration of the action of the will of the master to create the will in the unwilling idiot. Under

this rule Emma improved much, and still, as might have been expected, was yet a very low idiot when she died. A few lines tell the tale, but a volume of the size of this could hardly analyze the means of instruction resorted to for her training.

The next case is that of a girl who could at least stand on her legs; that much, and not much more.

Obs. XIII.—Nine years ago K., then eight years old, could stand on her legs, but not pass from the standing to the sitting posture, or *vice versâ*, without the greatest difficulty; owing to the inability of her will to command even the movements of totality: seated she remained, standing she stood; gently pushed, she would move forward without raising her legs, only sliding her feet on the floor. Seen advancing in this manner, her body rigid, her hands hanging, her head bending forward, and crowned by short, black, profuse hair, overshadowing her bright look flashed to a distance without fixed object, she looked like a little Velleda.

Now she writes, reads, counts, and sings; she speaks slowly, but quite garrulously when interested, and interrupts her ordinary great seriousness by an occasional smile very sweet. She is industrious and faithful to any kind of work commanded without needing supervision. At school she behaves with a remarkable attention and willingness to fulfil her part; and when the exercises are over, she often passes her arm, with a tenderness not devoid of grace, around the waist or shoulder of some younger girl, and goes away patting her. By spells she is gloomy and likes to retire in the dark out of the way; but

many intelligent girls of her age do worse than that in the same circumstance. We think she will never be capable of governing herself entirely, not on account of any imperfection, but of limitation of her common sense; which is all that could be wished in its kind, if she had enough of it. Though her features have lost her infantile loveliness, and she no more resembles the Gallic priestess, her goodness makes friends of any one who knows her.

Obs. XIV.—V. did not begin to speak until after four years. His mother attributes his idiocy to frightening impressions received when she was already three months enceinte, and lasted during the whole period of gestation. He had the measles in infancy; and being frightened himself at that time, had some sort of convulsions: rather vague record of the beginning of an interesting case of low idiocy, susceptible of great improvement. When V. entered the New York Institution, he was ten years old; his head narrow and elongated, presented forward a low forehead, and *parsim* hard nodosities of the skull along the sutures. His sight, hardly ever directed by the will, had affected the up and side-way fixedness; his uncertain gait, and the inefficiency of his hand, characterized the degree of his affection; he spoke a little, and knew three letters. He remained above a year among the doubtful cases kept on observation; but at last, warmed and carried by the insensible and nearly irresistible force of the general training, he betook himself to do and to learn, though with a characteristic slowness. His eyes have become quite natural, and his features are sweet. His look deviates yet slightly once in a while from its normal direction;

he follows the exercises of the groups to which he belongs with equal obedience and willingness. In a few years he will be able to take his place among the useful pupils in the institution, and later, we expect in the world.

The case of V. is remarkable for the absence of the mechanical or even automatic movements of the fingers which generally accompany the side-way look. Not only there is no mention of them in his records; but if they had existed, the passive training of the first period of his education would not have been very likely so successful. Nevertheless, this child offers a good illustration of the power of the general training when the individual training would fail: the reverse is true in other instances.

Obs. XV.—“James was admitted into the Penn. Training-School in February, 1857. We have never looked upon a more repulsive object than poor James. On his first visit, every one instinctively shrunk from his contact; his closely-shorn hair decreased the really small diameter of his head, and made more frightfully disproportionate the ponderous jaws and high cheek-bones. There was great obliquity of the eyes, which rolled upwards and exposed a large amount of the white; his lips seemed deficient in width, and were drawn tensely against his scurried, bleeding gums, and decayed, irregular teeth, which were constantly revealed; his skin was of a dirty color, and blotched with a disagreeable eruption; his body was very much bent; his arms hanging in front of him, or raised to allow his long, cold, and bony fingers to pass over the face or hands of the person with whom he might be sitting. He could not stand erect, his limbs were so con-

tracted; and his straddling gait, and crouched form, as he hobbled across the floor, reduced him, in appearance, to something less than human. When undisturbed, his body continually swaying to and fro, his head thrown far back, his eyes rolling towards the ceiling, and his mouth widely open, he certainly illustrated, in his person, the description of the Swiss cretin, while his intellect was perhaps more clouded than the average of that class of unfortunate creatures.

“His only expressed want for many days was for *marbles*. The eager inquiry was always put, when any person was preparing to go out, ‘Where you going?’ then followed the request, ‘ME want marbles!’ When the marbles were purchased for him, he kept them in his pocket, their jingle affording him indescribable amusement.

“Thus was James; pale, emaciated, and almost helpless; expressionless and inoffensive; apparently the lowest and most unpromising type of idiocy. We make use of the last sentence with the full consciousness of its import; we mean that no promise could be given, and but little hope entertained of his improvement.

“We allowed him to sit in our school-room, and watched the effect of music and the children’s exercises upon him; his head was thrown farther back, his long bony neck seemed lengthened, his naturally repulsive physiognomy heightened in repulsiveness. Was this, could this be an expression of pleasure? It was indeed, and as such we treasured it. Beads were placed in his hands; of these he soon became fond; and while in the gymnasium his stiffened and tottering limbs had been taught to climb a lad-

der ; in the school-room, the vacant restless eyes had been fixed on a plate of beads and the intellect elicited, not created, that could guide him in the rapid selection and arrangement of colors. After several months' labor, the pleasing report came that James could arrange beads by threes, with intermediate buttons ; and as a test of his power of numeration, the question was given : ' How many legs has a cow ? ' His answer was ' Two ! ' ' Oh ! James ! put on your cap, go out to that field, and count how many legs that cow has ? ' James moved off ; this was the first time those bent limbs had followed out an object requiring continued thought ; he made a direct line for a cow in the distant meadow ; a few yards brought him to a pointed, pale fence ; after sundry scratches of his skin, and rents in his clothes, he scaled the sharp angles of the fence, and again moved on ; squeezing between the rails of a second fence, he at length reached the place where the cow was standing ; and now commenced a most amusing investigation. He walked around on all sides, sometimes would go on hands and knees, and was thus engaged the greater part of a summer's morning. At length he was brought to dinner, and the conversation of the morning resumed. ' How many legs has a cow ? ' ' Four legs.' ' How many horns has a cow ? ' ' Two horns.' ' How many eyes has a cow ? ' ' Two eyes.' Thus James had accomplished a lesson, as deep and new to him as the most complicated invention, or most abstruse theory that ever excited genius.

" Having made these important essays, he now began to notice everything that occurred about him. Visitors

entering are critically inspected, and his observing and sensitive mind is often exhibited, when his face flushes in deep crimson, at such thoughtless remarks, as: 'Oh! what a creature.' 'How repulsive.'

"An idiot has been defined as one who cannot enumerate twenty, measure a yard of cloth, etc. James, with a little patient attention, soon counted twenty, and now fifty or more. His tongue is loosened, and he often engages in animated conversation with his teachers, and recalls with facility many of the associations of his home from which he has been separated a long time.

"His mother has been deceased many years, and her place supplied by a faithful step-mother. As an instance of wonderful filial affection, we will add the following anecdote of James: One Sabbath day, the children had been much entertained with an account of heaven; it was called our heavenly home; the home to which we would all go some day, and be with our parents and friends. An hour had elapsed, and other exercises had been engaged in, when, in pleasantry, the question was put, 'All the children who would like to go home and see their friends *before dinner*, stand up!' To go without dinner was a sober loss to contemplate, and but few arose; but among the latter was poor James. They were asked if they would not rather wait until vacation; most consented, but James still stood. 'Why, James, you do not want to go to F. and leave us, do you?' 'No, no! me want mother in heaven!' That boy had been impressed in his soul by the simple remarks of an hour previous; they had remained with him, and his act was

responsive to the affection that revived in his breast, with the remembrance of a long-lost mother.

“Repulsive as James is in appearance, the goodness and gentleness of his manners, and the real intelligence he now exhibits, are winning him many friends; he is watched with interest by periodical visitors to our institution, who are delighted in his progress in block-building, reading, etc. He is now able to read a great many words, and writes several letters and figures on his slate.”—(Dr. J. N. Kerlin, *The Mind Unveiled*. Phil. 1858, p. 121.)

If it could be said that there was, in the desolate appearance of James, a great deal due to his neglected condition after the death of his mother, neglect making the idiot look worse and be worse than idiocy does itself, the same attenuation of the diagnosis cannot apply to the following case:

OBS. XVI.—R. was one of the first inmates of the school established temporarily near our Legislature to give its members the opportunity of appreciating its practical value. He is represented as being, in 1851, a tall, well-formed boy of thirteen; if not for a squint, good-looking; though he was and proved to be an idiot of the kind refractory to intellectual improvement. He looked neat, and yet was not clean in his habits. He could eat and partly dress alone, but had never been able to tie his shoe-strings or cravat. He had used up any amount of books, and was only said to be a slow scholar, whereas the truth is that he did not then know the letters. And yet, except in the vacancy of his look and the light swinging of his walk, no body would have detected in him the unmitigated idiot he was.

This opposite discrepancy between the external signs of idiocy and idiocy itself, was due to the extreme care taken of him from infancy. Nurses and teachers had been constantly employed; his mother had bestowed upon him those tender admonitions and caresses which imprint themselves on all hearts without the mediation of intellect; the reverse appearances as just described in James are too often met with. As R. was brought up tenderly (though remaining greatly idiotic by his mental incapacity), he carried and developed, through his half-successful training, those moral qualities which endear the lowest to the highest, and indeed make all equal who equally love.

It would be unprofitable to narrate the difficulties encountered in the training of that young man. Suffice it to say that, with all his teachers and attendants at home, he could not, coming under the care of Dr. Wilbur, count two, nor read, nor write, nor distinguish red from white, nor be trusted on the simplest errand; and we could say that he forgot everything, if it was proved that any transient thing ever made a durable impression on his sensorium.

Starting from this state of sensorial and intellectual inferiority and of moral rectitude, fifteen years of training, more or less active, always enlightened, made him, not a scholar, but a trusty, faithful, affectionate young man; whose dark hair is already sprinkled with gray; whose aim is to obey and please, to work and be useful; in which he succeeds well in the garden and fields. Could it be doubted that the hardship of the task of his eager teachers was

greatly lessened by the moral elements deposited in his bosom by motherly affection? Then let us see him at work. He tries to read, or write, or draw, and succeeds very well, till by the effect of fatigue, distraction, or the slightest moral disturbance, he hesitates, becomes confused, and stops. Nothing more can go on. But if we encourage him kindly, and let him understand that his mother will be pleased if he does this or that, becomes a good boy, etc. To please her, for no other consideration only to please her, he again harnesses himself to the heavy task, which, for us, may be nothing but the light running of a pencil on a black-board, but which takes so much of his nervous power, that in the effort his reddened face and hands are soon covered with a heavy perspiration, and he soon appears more exhausted than after five hours of plowing To please his mother.

OBS. XVII.—*Profound Idiocy—Normal Cranial Configuration—No Complication.*—Armand B., aged six years, is of a sanguine temperament, of an athletic constitution for his age (one would suppose him nine or ten years); has had neither diseases nor infirmities. His face and cranium are of a low and vulgar type, are not perfect in their harmony, but without notable depression. The relation of the trunk with the extremities, the equality of both sides of the body, the muscular development, the warm color of the integuments, the abundance of rough and close hair, the erect habit of the head and trunk, the constant agitation of the feet, arms and fingers, which fatigue does not diminish, the normal shape of the organs of speech and generation, the thick and

heavy chest, the strong and arched vertebral column, the rather prominent and hard abdomen—such are the external signs of the condition of Armand. His activity is indefatigable as well as useless; his entire nervous system seems a prey to an irritable weakness which particularly concentrates itself upon the organs of speech and prehension. The hearing of music and the approach of a storm heightens this nervous state, the acting centres of which appear seriously affected, if we are to judge by the following physiological symptoms: Relaxation of the sphincters; voluntary movements few; mechanical and disordered movements ceaselessly alternating; the articular flexions of the lower extremities nearly impossible; immobility impracticable, as the feet will not come together; walk assisted by an arm, jerky and swinging; ascent and descent very difficult with the help of bannisters; run and jump null; prehension of bodies null except that which consists in holding with three fingers threads, which Armand raises above his head, and which he looks at while drawing them out to their last extremity. This child can receive and hold nothing in his hand; can send back nothing; cannot voluntarily leave off anything; can throw nothing except his plate or any other object which he pushes from off the table; he can neither eat nor dress alone; his tactile sensibility is so obtuse that one of his most assiduous pleasures is to strike with the back of his hand or fist the walls and all that surround him; he is indifferent to the smell of excrements, and the sweetest odors seem equally to have no effect upon his olfactory nerves; the taste is not more acute; generally the look

is vague, although very brilliant, and at times carried to the right and to a certain height; the strong and vibrating voice produces only cries nearly all akin to *hé-hé-hé*, by two or by three emissions at most, with rests and resumptions; there is no speech, and the whole articulation (if an emission of the voice accentuated by a motion of the tongue may be thus called) is resumed in a clattering of the tongue thrown against the middle part of the palate: this clattering repeated ten, twenty, thirty times or more without interruption, produces a sound equivalent to that made by drivers to urge their horses.

Armand cannot eat alone; masticates badly; digests imperfectly; has alternately diarrhoea and constipation; can hold neither his saliva, nor urine, nor fæces, which he generally allows to fall in the morning in from three to six or ten portions; he never weeps, blows his nose much, does not perspire; his head yields a nauseating odor; his pulse is rapid and full, his respiration strong; he has piles (at six years)! for which a physician prescribed the monthly application of leeches.

His attention is not absolutely null; if spoken to about eating, he listens; of punishment, he listens; of the string taken from him, he hearkens again; but that is all of human voice which strikes him. He is attentive to seek bits of thread, but inattentive to all we would wish him to do. Besides and beyond his liking for threads, his appetite and the restraint which may be imposed upon him, he manifests no intellectual faculty. A very instinctive creature, everything is subordinate to his unique liking and to his appetites; he destroys, eats indefinitely,

strikes everything he meets, men and things. He has an instinctive taste for water, to put his hands in it, to spill it, to plunge into it and to sprinkle himself with it; he utters shrill and sorrowful cries if he is not taken downstairs to wet himself in the rain. Besides, he is disobedient, mocking, teasing, easily angered, gay, caressing, without fear, prevision or imitation.

He knows very well that certain things are forbidden, which makes him seek them the more anxiously; and to attain his aim, he will display infinite resources of patience, edging himself gradually towards the desired object (generally some string), whilst his eye, fixed upon the person he thinks to disobey with impunity, lightens in a cunning, joyous, and almost Mephistophelic manner. As far as this order of phenomena is concerned, his memory is not to be doubted; his active spontaneity is immense, although disordered, as we have seen; and we must grant him a short-lived instinctive and negative will. What then does he lack? He lacks that, the deprivation of which mainly marks idiocy. Strong, cunning, stubborn, he has no intellectual and moral will.

His father works metals, principally gold and copper; his mother is robust, but of an exaggerated nervo-sanguine temperament. She acknowledges no hereditary disease; the child was born in a healthy country; the circumstances attending gestation and lactation presented nothing remarkable. He has never been ill, and his condition has not varied since four years, excepting such modifications as are brought about by growth.

I hardly had time to observe this child in the sin-

gle month I had him under my eye. Nevertheless, I taught him to eat alone, though not neatly; to come when called, instead of going away; to seize certain objects and give them to me on command; to hold dumb-bells in his hands as long as my eye held his. In all other respects—such as walking alone correctly, standing with feet together, cessation of mechanical movements—I have obtained nothing, having barely had time to know my subject. From careful observation, I became convinced that Armand would only be educable (with the means at command), if a person were placed constantly and exclusively near him to carry them out. But the family could not afford this expensive course, and I was forced to abandon this most interesting case; one in which idiocy, without complication or cranial deformity, was so well marked. . . . (*Translation from our own French book by Dr. E. C. Seguin.*)

As the questions relating to the influence of the size of the head upon idiocy have received yet no solution, we merely group them according to certain appearances, to serve as material for future investigation, and begin with hydrocephalus.

OBS. XVIII.—R. came to Syracuse, in 1852, being eight years old; pale to whiteness, she was manifestly affected with a frontal hydrocephalus. Tall, her forehead thin, and transparent as Chinese paper made of rice-straw, slightly yellowed by exposure, was broad, prominent, high, curved and separated from the vertex and parietals by a deep and constantly hot depression running across from ear to ear; her irregular teeth served not to masticate, but to

bite her wrist cruelly ; and her glossy fingers, terminated by narrow nails, were too often tinged with her own blood. She was alternately crying and laughing, looking more like a dement than an idiot. But amidst these desolate symptoms, R. never ceased to appear lady-like. Even when slobbering or when tearing her flesh, she would interrupt herself to pick up a down from her dress, and looked in every respect, but for the direct symptoms of her infirmity, as a dame of the old *régime*. This remark is not indifferent, for it shows that one of the lowest subjects of idiocy may be so impressed by the example of an accomplished mother as to imitate it, though she could not be intellectually educated. Thus R., after fourteen years spent among children of all sorts of habits and manners, is yet, in womanhood, the tidy person she was when a child. As it could* have been expected from the beginning, if she learned little by the way of personal teaching, she has gained considerably by the reflex action of the general training. By the former she never went farther than the assembling of colors, forms, beads, and the like, with some manual imitation and the accidental emission of words, rarely of short sentences, involuntarily, or on the spur of a sudden impulse. She learned to follow with pleasure and interest the movements of the life of which she was a participant. She has learned also to help herself, to a great extent ; to appreciate the right and wrong in others, and has developed some affections for her fellows, sometimes delicately expressed.

We have little doubt that her education would have been more successful were it not that the disease which

caused her infirmity seemed to never have subsided entirely to the chronic stage. For even to this day she has spells of crying, during which she throws her hands, and sometimes carries ours, back of that monstrous forehead, on that burning depression, where there is yet an active disorder at work. The cause which made her idiotic continues its detrimental action by preventing the function of her remaining faculties; and though much improved in mind and body, she is yet an idiot, suffering from sub-acute hydrocephalus.

OBS. XIX.—H., from Southern Ohio, is one of a woeful band; children of nearly related parents; a father under the mean average of intelligence, and a mother much lower in the same scale; all present the same mental infirmity and physical defects, in various degrees. Their heads are of the bulk attributed to hydrocephaly, though sometimes pertaining to primitive hypertrophy, followed by atrophy. The forehead, the coronal suture, the parietals, are high and broad; the whole head a tower of idiocy. One girl is coarse and dirty, swearing more than speaking; shedding at eighteen her fifth set of teeth, all rotten soon after emergence; crouching and chewing her fist, dripping in saliva. After her comes H., more pleasant, but stubborn. His education was tried with very little success; and though he can speak and read a few words, he learns very slowly, very little, and is among the unpromising. His two next brothers have learned something in the public school, though they appear more or less idiotic to everybody except to their parents. One of them plays the violin with a vengeance. Where is the

father, with a full share of intellect, whose nerves could stand the spectacle of these children, and of their besotted mother, gazing in admiration around the fiddler, though it be their best and happiest moment. Holy Illusion! spread thy veil between him and those he has wished perfect.

OBS. XX.—*Profound Idiocy — Hydrocephaly — Epilepsy.*—Philip d'O., aged six and a half years, tall and slim, of a lymphatic temperament, of tolerable, though equable health, has several epileptiform attacks during the day; during these, which affect the face and the epigastrium, he froths at the mouth, and they are followed by paleness and prostration. The cranium is voluminous, thrown back, symmetrical; the coronal suture is low, the superciliary arches much depressed throughout, the temporal arch is very high, angular, and long; the frontal eminences are prominent on each side, of a deep vertical depression starting from the nose. The lambdoid suture is elongated, the tuberosity of the occiput narrow and projecting. The face is much smaller than the cranium; the eyes are dull and small, the lineaments well proportioned relatively, except the mouth, which is large and hanging; the neck is notably long and narrow (a circumstance which I have never failed to observe in cases of congenital epilepsy, and which I have seen nowhere mentioned). The posture of the head is inclined to the left, that of the body and the members is that of struggling and agitated weakness. With the exception of the thickness of the lips, young Philip's mouth is well conformed; the organs of generation, the

thorax, the spinal column, the abdomen, present no anomalies.

If physical force is absent in this child, his need of agitation and displacement is constant. His nervous apparatuses seem all to participate in the disorder which produces exteriorly the manifestations which the family are obliged to conceal. No irritating agent seems capable of educating this irritability. The sensitive nerves, as the motor, are inactive to an incredible degree. Always moving, hopping, jumping, rolling on the ground, climbing up on to the back of chairs, from which he slides like a squirrel, Philip bites himself, strikes his head mechanically, strikes the furniture spasmodically, and gives himself up to all possible sorts of motile disorders. Alone, he skips while walking, hardly puts his foot on the ground, stumbles on the floor, falls upon his hands, rises quickly and begins once again; if an arm is used to assist him, he swings on it and almost immediately escapes, or sinks to the ground uttering cries; immobility is unknown to him; in bed, before sleeping, he swings himself, sings and cries. Although his feet hardly rest on the ground, this contact seems painful to him; but the excitations which result from it, do not deserve the names of walk, run, jump, etc.; it is a kind of instinctive action which has no name. Articular flexion is easy but involuntary, so that the prehension of bodies is quick and instinctive; Philip takes hold, lets go, rejects, but he does not receive with his hands, which have never been of any use to him, save to climb, to search his parents' pockets

and to seize a glass, plunge his hands into a dish, etc., etc.

Tactile sensibility seems concentrated to the soles of the feet, and is obtuse everywhere else; the taste is marked for succulent, sweet, and aromatic substances; for the strongest liquors, rum, kirschenwasser, etc. The smell only perceives the strongest odors; and does that not by inspiration through the nares, but by buccal inspiration; Philip swallows odors, and does not breathe them; thus his father regales him with tobacco-smoke, after which he jumps, to catch it with his mouth before its final dispersion.

The apparatus of hearing is normal, but the function is rarely voluntary; the look evades all direction; unfixed, vague, and erratic alternately, it is lost upon an undefinable point, or runs over objects with a rapidity which is the more surprising, because it does not prevent accidental vision; but the look, properly so called, does not exist. The voice is a cry analogous to that of carnivorous animals, a little modified by a tone of suffering; it is repeated twice, three or four times at the farthest, it ceases, or re-commences if the internal cause of the cry continues; the speech is limited to the noise *Pa-Pa-Pa* repeated three or four times, and which, in moments of casual attention, seems to express all that we would wish him to say. The organs of generation are the seat of a mechanical irritation for which the nurse is blamed. The appetite is but little developed, but the child is constantly eating candy, so that his thirst is great; he chews earth, sand, leaves; gnaws the bark of cord-wood which he may

come across, rolling himself on the ground, not in seizures of epilepsy, but in his extravagant paroxysms of rage. He eats everything, even soup, with his hand; does not masticate meat, which it is necessary to hash up with bread, and which is generally modified by the art of good cookery; he rejects the crust of bread, swallows the soft part cut into cubes, without chewing it, as well as potatoes, which he prefers to other vegetables; he digests badly, has frequent diarrhœas, passes his fæces and urine involuntarily day and night, slobbers constantly, perspires upon the eyelids, the nose, and the upper lip; his head emits a penetrating nauseating odor which vanquishes scents and defies cleanliness.

The sleep is pretty good, but always broken by periods of wakefulness, which the child employs in satisfying his fatal monomania; the pulse varies frequently and undergoes several changes of rhythm during the day; respiration is normal.

Philip manifests no attention nor comparison, etc., except when he meets with objects he cares for; speech can but seldom make him turn his head; but music! if he cries, music will silence him; if he has one of his epileptiform attacks, music will overcome them gently; if he hears a tune, he at once begins to hum it, and will repeat it until another shall have been sung to him. It seemed to me that he did not lack the memory of place and of things which pleased him, but at first I discovered only insignificant manifestations of this aptitude. Thus after several months of care he was taken into the country, when I saw him, nimbly escaping

from the carriage, lose himself in the intricate walks of an English garden, and soon we found him quietly seated upon the bifurcation of a venerable apple-tree, which his nurse told me was his favorite haunt: I could no longer doubt that he had, at least, the memory of locality.

He had so little foresight that the windows and banisters were barred at home, and that he could not have remained a moment alone without meeting with an accident. He was quite fond of petting, though not caressing; indifferent to everything except sweetmeats and music; he did not play, and imitated nothing; without any moral sense, no applicable will dawned on him; and even the negative will did not appear until some time after his education was commenced, true progress upon the purely mechanical violence with which he escaped all direction; idiot he was truly, in the full meaning of the word.

Shall we say that this child ought to have been educated according to the method of Rollin? And why not? Seeing that I was using months, wearing out my strength and my health in immobilizing the infant-machine, and to make him perform some regular and willed movements, the parents went to their physician (*risum teneatis*) and complained that nothing was being done. I was obliged to give some explanation to the doctor and to remonstrate with the family in order to continue to have the right of saving the child. However, as I had foreseen, the regularization of movements immediately created attention and rendered sensorial perceptions possible. The nomination of objects was more difficult; when I named an

object, he did not always give it to me ; if I demanded two, he did not give them, and appeared no longer to understand. Philip read with his eyes upon cards (for he did not yet speak), and gave me any object whose written name I showed him, but not two ; in order to succeed in this latter exercise, I found it necessary to ask him for two things having some relation one to the other, such as *pen* and *ink-stand*, *paper* and *pencil*, *garter* and *stocking* ; I then sought objects having more distant mental relation, such as a *knife* and a *fork*, a *napkin* and a *plate* ; then objects with contrasting qualities, as a *chair* and an *arm-chair*, a *bottle* and a *decanter*, a *shoe* and a *slipper*, a *vest* and a *coat*, etc., etc. From this groundwork we proceeded to the study of numbers. Speech occupied us about two years ; for example, I find in my notes that in fifteen months Philip spoke pretty well, but when it is commanded him he *will* not speak.

In fact, the great difficulty was, that *would not*. I had cut short all manifestations of motor disorders, I had desired he should have regular movements ; he had them ; I had regularized this class of phenomena so that, from the sixth month of the training, the epilepsy had not returned ; I had wished to fix the look, and subsequently the attention, and consequently all the practical results of this success, reading, drawing, writing, etc., and all the usual and positive knowledge, had followed ; but Philip had need of the impulsion of another will to produce all the manifestations of his faculties and aptitudes, so new in him, that they did not as yet perform their functions voluntarily or by habit. What was to be done to make the child

will? Until this time I had hesitated, wishing and not wishing, halting between the puerilities or the obstacles which were opposed to me, and the logic of my method which urged me on irresistibly. I decided not to act, for a child, sometimes unhappily for him, belongs to his family, and nothing is to be undertaken but what it consents to most explicitly; but to tell the parents what I thought necessary to be done. Eight years ago* I expressed myself, in an analogous position, in the following terms:

“That which we should endeavor to develop in the phase of education we are now entering, is *will*, the spontaneity which is rendered into acts by *initiative*. It is necessary that A. should take the initiative. In order to accomplish this, the education which has so far been revealed under the form of *command*, should clothe itself with that of *observation*, passive attitude which shall rarely be interrupted by an evident direction or an imperceptible authority.

“In this new period all that which went forward to meet the necessities and wishes of the child, should be kept afar off, forming, as it were, a circle about him. He, in the centre, shall never be able to reach the necessary circumference, but by the spontaneous radiation of his will towards the encircling objects he desires.

“This negative provocation to the will must doubtless be interrupted by physical and intellectual occupations, such

* “Résumé de ce que nous avons fait, Esquirol et Seguin.” Paris, 1838, pp. 12, 13.

as gymnastics, reading, writing, pronunciation, nomination, and the various exercises of ordinary memory ; but these labors (wherein the master's will is to be, as before, actively manifested) shall hold but the second rank, and shall more especially serve as recreation from more laborious inaction.

“Now, therefore, more than ever, all deleterious influences of pity, of assistance, of service, should be withdrawn from him. Do not say to a sick person that he is *in extremis* ; to a child that he is weak ; he will not dare to walk ; that he cannot do everything like everybody ; he will never do anything. At the master's side is wanted not a mawkish and indulgent nurse, but a strong man, whose manner, gesture, voice, abound in energy and impregnate with it the being to whom we wish to give self-reliance ; a man who knows how to obey like a soldier ; a calm and disciplined man ; a living sentinel, who shall act positively or passively, just as he may have been ordered. Do not say that we ought to wait still awhile ; we have already waited too long. If you do not follow this advice, it shall remain as the proof unhappily fatal, of what you might have done for your son and what you have not done ; choose, etc.” Unfortunately, Esquirol and I were right, as since I have had need to insist, in similar terms, upon the severity of the moral treatment for Philip. If we except certain acrobatic exercises in which he excels in the gymnasium, exercises which bear a sad resemblance to the apish habits I had divested him of with such pains, this youth has remained precisely at the point I left him. I do not im-

pugn^d the zeal of his tutor, who has fruitlessly employed so many valuable years with him; no one can do him better justice than I; but in the position he has accepted, he can be, he is, in fact, but a means without results, a cause without effect. As to his pupil, he is a poor child sacrificed to stupidity, as others are to satisfaction of the vilest passions. It has been said of two of the children here described, that their only progress consisted in having become from *idiot, imbecile*. In the common sense in which these two terms have been applied, no greater praise of my method could be made; for, if in two years I have brought an idiot to the point of reading, writing, cyphering, speaking and all that, so tolerably that after two years of my efforts the qualification of imbecile might be given to the child, what might I not have done in the numerous years which followed, and during which, with or without another method, there was not an iota of progress? In truth, the arrest of development was instantaneous, and such that one might imagine God had said: Justice shall not permit the accomplishment of this beginning.

OBS. XXI—*Profound Idiocy—Hydrocephaly—Chorea*.—Leopold N., aged nine years, of a scrofulous temperament and of delicate health, can barely see with one eye, and not at all out of the other, which is the seat of scrofulous conjunctivitis. The cranium is elongated, the temporal ridge light and expanded, the frontal eminences more prominent than the anterior base of the cranium, whose sides are symmetrical. This is not true of the face, which is small relatively to the skull, and which has been

sadly furrowed by convulsions. The parts on the right of the nares, the lips, the tongue, and the corner of the eye especially, have retained the contractures consequent upon this scourge of infants; and the limbs of the right side, especially the hand, partake of this retraction, which assumes the aspect of a hemiplegia; the body is otherwise well proportioned. The habit of the body is that of a choreic person. The organs of voice are not merely vitiated in consequence of the contracture of the tongue and lips, but the teeth are bad and irregular; the roof of the palate is too high in the centre, and, as it were, made into a deep gully; the lips always apart and closing badly, even when forced together, allow an abundant saliva to escape constantly. The organs of generation are precocious, the sternum is prominent, the chest approximating the shape called pigeon-chested; the vertebral column is weak, deviating somewhat anteriorly and to the left in the dorsal region; the abdomen is large, not hard, but tympanitic.

Leopold is very active, but feeble, and he can do naught but stamp and be agitated without aim. This visible disorder of the nervous system is fearful in him; he weeps, cries, laughs, sings, almost always without motive; the slightest cause augments his irritability, which is excited to the highest point by odors, electricity, and even cold (rare phenomenon which is explained by the diseased delicacy of the touch); and he prefers the warmest places, except in stormy weather, when he suffers singularly. Is this action of cold due to the chorea? I am inclined to think so, since no idiot is thus affected

by it, notwithstanding what has been said. If some prefer the heat of the stove to the acute cold of winter, it is a matter of taste in them, taste as obscure as is in them tactile sensibility, and which does not prove that cold is painful to them: for practice has proven to me the contrary in all cases, except this one complicated with chorea; and which consequently cannot be counted an exception to the rule.

It is probable that the nervous centres and ramifications in Leopold, excepting those of sensibility, are seriously affected; at any rate, all physiological manifestations corresponding to these apparatuses are disordered or null. General sensibility set aside, we in fact find the disorders of locomotion patent, and chiefly so on one side of the body; evident contractures on the right; an emaciated muscular apparatus; sphincters without irritability, with almost no voluntary action; automatic movements, principally suction and biting; spasmodic motions of the fingers, hands, and arms; and all movements which should be coördinated, disordered.

Thus the jerky walk is accompanied by numerous falls; ascent is impossible as well as descent, the jump, and the run; the difficulty of seizing with the hand is extreme; what the hand has succeeded in grasping it allows to fall the next instant, while it cannot be voluntarily opened to let go; and this incapacity is much more marked on the right than on the left side. If he wished to eat, the spoon, often filled, would drop from his hands or strike his eyes, his cheek, or his nose before getting into his mouth; in fact he could not be safely

trusted with knife or fork. He ate from others' hands with diabolical grimaces; he in vain tried to put on his stockings; to put his cap upon his head was to him so difficult an operation that it often lasted four or five minutes, and that always awkwardly placed, it soon fell.

The tact was extremely and abnormally sensitive; the smell nearly null, the taste without preference, and even a little depraved; audition unequal, and at times more difficult than at others; the quality of the look little appreciable through the albugo, which had destroyed the sight of the right eye and considerably dimmed that of the left; the organs of generation rather precocious and wilted by self-abuse; the voice reduced to a few cries, the speech absent, if not willingly, at least effectively; assimilative functions rather active, digestion bad, rather on account of voracity than because of any organic disease; the dejections were involuntary, the tears absent, the nasal and buccal mucus abundant, perspiration insensible, and sweating unknown; the sebaceous secretion fetid, the sleep agitated, the pulse quick and irregular, respiration jerky. Such was at nine years the physiological aspect of Leopold N., who could not walk, and at seven could not stand.

His intellectual state was but little more satisfactory. His sensorial perception, partly prevented by the state of the visual organs, had brought his mind but few subjects of comparison, of judgment, of reflection, etc. If he was not entirely unintelligent, he only thought of seeking alimentary objects and some playthings, which he generally held in his mouth. He knew nothing of let-

ters, reading, drawing, or arithmetic, etc. He loved music, sang involuntarily, humming and swinging his head to and fro in bed. He had memory of things and persons, and gave signs of instinctive foresight in hiding that which he could not instantly eat, in order to take it up soon afterwards.

Without having the instinct of personal preservation nor that of order, destructive, aggressive without wickedness, loving to search garbage and to find in it some foul morsel, Leopold was easily angered, disobedient, jealous, affectionate, gay, and especially rejoicing over any ridicule which assailed his comrades; courageous, thoughtless, full of vanity, but rather diffident, and much of an imitator. Relatively to his acts he understood right and wrong very clearly, but he would do nothing; and without lacking spontaneity, he only used it to satisfy his negative instincts of resistance and his positive instincts of assimilation. Leopold had no other intimacy with his comrades than with reference to the vice above mentioned.

Born of a father addicted to drink, and of a very beautiful and healthy mother, he was the last of six children. The five others, four of whom were girls, present a perfect picture of health and strength. He was born in a butcher-shop, and not he alone of all my pupils. Whatever may have been the influence of these circumstances prior to confinement, no blame is attached to the nurse, and nevertheless convulsions occurred at six months; then they were terrible, once, twice, three times; then they diminished until the age of three, when symptoms

of chorea became apparent. Tainted with scrofula, he has eked out a miserable life until seven years old; always carried or lying, he lived like a paralytic. His condition, then, had improved from one to three and from seven to nine years, without his ceasing, for all that, being idiotic and choreic.

Thus I judged Leopold, and it was upon the basis of the diagnosis of profound idiocy, affecting principally the motor and perceptive apparatuses, that I rested the treatment. Leaving aside the psychological question (which, I repeat, has occupied a great deal too much attention), I busied myself, during several months, only with the education of the motor functions. What mattered it that this unfortunate child should read, so long as he could not hold his spoon! What did even the education of the perceptive functions, the hearing, the sight, etc., amount to, so long as movements could not be regularized nor immobility attained? It is to be seen, in this case as in many others, that progress does not amount to much, or is impossible, if it be not produced in the order indicated by the physiological disorders: in Leopold this way was all traced by the symptoms. Without concerning myself about the alphabet, fables, etc., I made him mount, or rather I hoisted him high, in front of a ladder; I placed his feet upon the first round, his hands upon the fifth, and I descended, still holding on to his gymnastic belt for fear of accident; I had well judged: after a sort of hesitation of the body, produced, in part, by the fear of falling, in part by the impulse which agitates choreic persons, his legs bent under him, and I received the child

in my arms; no other harm was done except a little fright. We began again; the fear of falling, for I affected to hold him less and less every day, gave him a strength of resistance of which I should not have thought him capable; and as the chorea reappeared during this exercise in proportion as the child had less fear, I occasionally increased the distance to the soil by a round, in order to keep up this salutary anxiety. In fact, this anxious pre-occupation was so effective that I did not long delay in putting him behind the ladder. There, indeed, we had, he and I, to submit to severe trials. The hands of poor Leopold had until then held nothing, and consequently carried nothing: they were now obliged to hold a round of the ladder, and to support his own weight. It is true that I helped him somewhat at first, because my hands, placed over his for fear of accident, supported everything, and also because I was in the habit of lightening his burden by often placing his feet upon the lower round of the ladder. It is true that his feet, incapable of voluntary contraction, soon slid off, and then on his part came cries, on mine new efforts, but it must be done. This last word was everything, and as soon as Leopold understood it, I no longer heard cries of anger; he only gave utterance to those of fatigue or pain, and these I always listened to, so far as the proposed aim of our efforts allowed. Notwithstanding some yielding on this point, but without weakness, I at last brought him to stand alone and without support behind the ladder, seizing a round, holding up his own weight, he who two months before could neither stand nor carry anything; that was something.

But one must learn to let go, voluntarily, of a thing which has been seized, and Leopold let nothing go except accidentally. What was to be done? The same ladder, the same exercises, will serve our purpose. Placing him behind the ladder, I place my hands again upon his and await that he should tire. At the first expression of fatigue I allow him to descend, and liberating one of his hands, the left, from under my own, I invite him to put it upon the next lower round; he has understood, but does not comply, and I wait. If he cries too painfully, I detach myself the end of the fingers of his left hand from the round, and it drops down to the next. It may be asked why this was not done at first. The answer is easy, and I give it the more readily as it applies not merely to this exercise, but to all those that enter into the treatment of idiots. In everything and everywhere we must require of the child the greatest possible amount of synergy; for, if in the first exercises we ask less of the child than he can give, the minimum of activity will always be evoked, and yet he will always fancy that he is doing too much; besides, it is much easier, after having been very exacting, to become less so than the reverse. In order to be kind and indulgent without danger, show yourself, at first, severe and rude, when necessary; and thus always; to obtain B, demand B + D. Thus, in respect both to morality and to the progression of exercises, it matters as much not to require too little, as to demand exactly the thing which it is necessary to obtain. What I here wished to obtain, was that the child should voluntarily let go of one round to take hold of a second; what I did not ob-

tain was, that the nerves should act upon the entire length of the hand ; but what cared I ? Morally, I was certain of having been obeyed as completely as possible ; physically, I had obtained from a portion of an organ the function which I had excited in the whole, for want of knowing where the incapacity of voluntary contractibility might cease ; in reality I had obtained more than I had asked, for I thereby possessed a more precise knowledge of my subject.

This knowledge enabled me to improve our special gymnastics with reference to two points which had, later, some influence. I deduced from it that the right hand evaded, more than the left, voluntary direction ; and I began by detaching from the round the two distal phalanges of the right hand (which I did not do for the left) ; then I allowed this latter to descend last for some time, to spare the weaker right a momentarily, useless, and painful shock. At least a year passed ere he was able to ascend behind the ladder without having his hands and feet directed in their movements of ascension ; but we should not be surprised at that. In descending, the tension which was exerted upon the whole length of the muscles did not allow the choreic movements to manifest themselves, and the commanded movements having their entire action from above downward, the members were enabled to descend from one round to another without being agitated and diverted from their aim in this rapid exercise ; whereas to ascend it was not thus. In order to rise from one round to another, the hands and feet are required to perform a movement from below upwards ; an

effort which is slower, more complicated than the simple flexion required for a simple motion from above downwards. So that it would not have been sufficient to have directed for a long time his hand from below upwards as we have done to teach him to climb behind the ladder. In the long intervals which were left us by these fatiguing gymnastics, the child was drilled with the balancing-pole, with dumb-bells carried for hours, then carried above the head; and in transporting with the hands, the arms, or the back, bricks, stones, etc. During this time the walk was being regularized, falls became rarer, Leopold no longer went up-stairs on all-fours, and slid down; he took hold of the bannisters and held on for dear life; but then there was a cake waiting for him on the second floor; soup was served on the first, or nuts were to be had in the garret; dainties had been put in the proper place.

Care was, however, taken at first to make him wish a long time for these; then to remove to a distance the object of his desires; then to substitute quality for quantity; and at last to give him only trifling rewards for the really meritorious pains which he took to obtain them.

I shall not give greater details about this child. I shall only direct attention to the fact that Leopold, who once allowed his cup to fall, now holds a mattock very well, and began to use it quite well as soon as he was able to stand behind the ladder; that he masticated better as soon as he was given hard bread; that he held with his lips a heavy object better than a light one; that he saw or rather looked with more attention at a small, than at a large picture; and that he preferred such

exercises as required activity, to those which caused immobility.

After three years of care, he spoke well enough to be understood; but he still, while speaking, made rather ugly faces. Besides, he read, wrote in large letters upon a black-board all that was required of him; he copied a drawing with skill; he cyphered, was fond of money, liking to take possession of things which he foresaw might be of advantage to him; he was regular in his walk, ascending and descending with the slightest support (not able to jump), but otherwise free to direct his hands and feet where and when he wills; he was therefore considered as fit to learn a trade at twelve years; it is this which removed him so that I could not longer give him my personal attention. All that I know of him, is that the remains of chorea which were left at our separation, have not increased, and that all his progress has been confirmed, although he ceased to receive any special cares.—(*Translated as above.*)

Obs. XXII.—The largest puffing up of the cranium by effusion we know is that presented by Miss Maria T., of this city, now seventeen years old. Her head is thirty-seven inches in the largest circumference at its summit, and twenty-seven and a half over the vertex from one foramen auditorium to another. From the same points around the base of the forehead measures only thirteen inches, subsidence to be expected, but so extreme in her that it strikes one with awe. Lower, the body is but a mere skeleton, whose legs are for ever crossed at the thighs; if straightened, they retake slowly their twisted

position ; the feet thus are transposed from right to left ; protruding, strongly arched, like dolls' feet. Her arms and hands could not be likened, for size and shape, to anything else better than to twin wooden Swiss forks ; they move as slow as leeches, but sure, to the object of their aim of which the fingers take hold by crossing each other, as the elongated claws of a prisoner-bird do when seizing a tiny wire.

Her condition began to show itself after vaccination ; but the mother acknowledges great anxiety during pregnancy. Other children all right.

Miss T. never assumed the sitting or standing posture. Her animal functions have always been very good ; and she uses by preference animal food. She began to speak when five years old. Her senses have always been acute, but she lost her sight five years ago. In 1865 she had spasms for the first time ; since, she has grown weaker, and entered already in her period of decay. Though her brain was, we may say, drowned in an ocean of heterogeneous fluid, it kept up active communication with the world. She was cheerful, sung and talked until lately ; used playthings as ordinary children do ; liked to see bright objects waving before her eyes when she could see, and even now in cæcity she amuses herself by making papers rustle and move before her absent vision, muttering yet, though indistinctly, " Hurrah for the colors ! Hurrah for the flag," touching reminiscences of popular festivities which impressed her at an earlier period. Her gentle disposition, her affections and family feelings, testify of the angel spirit which ministered to her and

brought to her couch everything which could feed the body and the soul.

We plead guilty of a kind of cowardice in suppressing, for social considerations, the name of the mother who, for seventeen years, has devoted herself exclusively to the happiness of her strange but loving child ; who seems to be born to show what a mother can do. But we are carried by our studies into another sphere. We cannot avoid thinking that Miss T. is born also to permit us to study the ultimate organic alterations through which intellectual functions can take place ; and that more honor would be paid to her memory by a scrupulous study of her organism after death by men like our Dalton, Draper, Brown-Séguard, and the preservation of her remains in the shrines of Science, than by giving her body to be eaten by maggots as if it was the insignificant carcass of a king or a cobbler.

OBS. XXIII.—In apposition to these large-headed children, we naturally enough present the small-headed ones affected with microcephaly. None of them, that we know of, have been more accurately represented than the “ Aztec children ” are, by Dr. J. C. Dalton, in his *Treatise on Physiology* : “ They were boy and girl, aged respectively about seven and five years. The boy was two feet nine and three-quarter inches high, and weighed a little over twenty pounds ; the girl was two feet five and one-half inches high, and weighed seventeen pounds. Their bodies were tolerably well proportioned, but the cranial cavities were extremely small. The antero-posterior diameter of the boy’s head was only four and a half inches,

the transverse diameter less than four inches. The antero-posterior diameter of the girl's head was four and one-third inches, the transverse diameter only three and three-quarter inches.

“The habits of these children, so far as regards feeding and taking care of themselves, are those of children two or three years of age. They were incapable of learning to talk, and could only repeat a few isolated words. Notwithstanding, however, the extremely limited range of their intellectual powers, these children were remarkably vivacious and excitable. While awake, they were in almost constant motion, and any new object or toy presented to them, immediately attracted their attention, and evidently awakened a lively curiosity. They were accordingly easily influenced by proper management, and understood readily the meaning of those who addressed them, so far as this meaning could be conveyed by gesticulation and the tone of the voice. Their expression and general appearance, though decidedly idiotic, were not at all disagreeable or repulsive; and they were much less troublesome to the persons who had them in charge than is often the case with idiots possessing larger cerebral development.”

This description of the learned Professor of Physiology of the College of Physicians and Surgeons of New York, portrays the Aztecs with a masterly fidelity, as they were exhibited in this city. We had the opportunity of seeing them in 1852, when first shown in Cleveland, Ohio, when they had not yet been submitted to a thorough system of training and feeding for the stage. Then, though

they could not yet speak a single word, they gave evidence of being capable of a certain degree of education. It was our opinion at that time that their habits could have been made nearly social, and their senses adapted to the reception of more intellectual phenomena, though without any chance of restoring the qualities of the will which create independence. We considered them capable of being elevated from the level of the monkey to that of obedient, sensible, and happy children. This prospect frankly laid out, did not seem to please their keeper, either because he did not believe it possible, or because he feared it would have diminished the chances of his success. For our part, we thought that the Aztecs speaking, drawing, writing, counting, etc., with the heads analogous to those of some of the Simian tribe, would have presented a more philosophical spectacle to the thinker, and a better teaching to all of us, than the sorry and silly things they were made to remain.

Obs. XXIV. — *Profound Idiocy — Circular Microcephaly — Epilepsy.* — Charles de V., aged five years, of a scrofulous diathesis, of equable health, only interrupted by frequent paroxysms of epilepsy. His cranium, large at its medium base, is exceedingly conical; the face representing precisely the same shape reversed; and this relative symmetry of the face and skull is the more remarkable, as it is not marred by any inequality from side to side. The general habit is that of prostration, only interrupted by twitchings of the arms and contractions of the face and epileptiform seizures. The organs of speech are thickened by the abundant saliva which pours out,

the tongue frequently hangs out of the mouth ; of the first set of teeth only seven are grown ; the chest and the loins are well conformed externally, but do not support themselves ; the abdomen is large and hard.

Charles has naught but an automatic activity ; usually he cries ; he cries if he is touched, he cries if he is spoken to when he eats ; and when he hears singing, he stops for a moment ; the approach of a storm increases much his paroxysm and his cries. No distinction can be made as to the incapacity and the excess of sensibility of both halves of the body ; muscular movements are as much limited on one side as on the other ; coördinated and voluntary movements are wanting ; of all positions he only retains that on the bed, for standing he would fall without mechanical support, so that he no more walks than he seizes, holds, flings, receives anything with his hands. The only thing that he does, is to plunge his index and thumb into his mouth and to bite them while crying, and to pass the back of his hand over his lips and on his tongue while he murmurs *ou, ou, ou, a, ou, ou, ou, ou, a*, etc., to express his satisfaction, which generally occurs after dinner.

Charles, so easily impressed by the touch, seems not to hear, look, taste or smell ; however, it must be by aid of the smell that he distinguishes food, for at its approach, without looking, he opens his mouth.

He does not masticate ; digests badly ; is careless ; salivates constantly ; does not blow his nose, weep, nor perspire ; his head gives out a fetid odor. His sleep is sound ; generally it ends in the morning in an epileptic attack,

the pulse is variable and more hard than frequent; the respiration is oppressed.

Excepting the attention he gives to his feeding (and I am still at a loss to know by what sensorial acts he provides for it), Charles presents not a trace of intellectual operations. The frequent need of food only can force him to be attentive to what is going on around him.

Idiot, in the full meaning of the term; but much more than idiot, since epilepsy prostrates him ten to twenty times a day; I have never seen, even in the *hospices*, a subject offering a more complete type of these two infirmities. I have never known his family, nor the possible causes of his condition, and Charles remained too short a time in Paris for me to attempt his improvement. During his short stay I had only time to study him, and a favorable prognosis has not resulted from such study; nevertheless, it would have been necessary to have tried to treat him at least one year, to affirm that he was *incurable*, or that at least his condition could not be *ameliorated*.

OBS. XXV.—*Profound Idiocy—Circular Microcephaly—Not complicated*.—Cecile de G., fifteen years of age, of a sanguine temperament, enjoying fair health, subject to phlegmasiæ of the respiratory mucous membrane, having menstrual suppressions for months at a time, highly affected with strabismus and myopia. Her cranium, which at its largest circumference does not measure more than forty centimètres (15·7 inches), is nearly circular at its base and up to the sincipital summit, which is high, and to which all the bones rapidly centre, obliterating all the normal prominences of the anterior

and lateral lobes, and of the cerebellum; in other respects it is symmetrical. The face, less symmetrical and little harmonious, offers the aspect which results from the union of a very low forehead, of wild and somewhat strabismic eyes, of thick lips widely open and hanging, which are rendered prominent by their ruby color and their size in the midst of a colored profile, whose details are animated by no expression. The body and members are well formed, are distinguished by central rigidity and by laxity of the extremities. The waist sags, the head is bent, the arms hang, the debilitated and abnormally taper; fingers are often in her mouth or placed on the knees. The posture is very lax and inactive. The organs of speech, thick, clumsy, bathed in saliva, are motionless; the lips are of a rigid softness, the teeth are irregular, the superior prominent, the tongue is heavy, the velum palati low, the pharyngeal hiatus narrow and limited by large tonsils and a long uvula.

Cecile lives in almost total inaction, and attempts nothing; her nervous irritability, usually latent, is produced by the most futile and insignificant causes. The least restraint, vexation, want of success in that which she has undertaken by order, heat, electricity, the north wind in dry weather, develops in her an abnormal nervous state, tears, cries, spasmodic movements, gnawing, gritting of teeth, an excess of saliva, etc. All the nervous centres do not seem affected; but the cerebral mass must, because of the circular compression it experiences, be in abnormal physiological conditions.

In fact, general sensibility is quite acute and often

sickly, and motility is here imperfect, there impossible. Otherwise, no difference in the sensibility and irritability of the two sides of the body is to be observed, nor muscular contractions or mechanical movements, except gnawing. Voluntary movements are all general, clumsily executed, incomplete, and restrained; and more, no single partial, willed movement of the extremities can be pointed out which is skilfully and usefully done. The articular flexions are incomplete and embarrassed. Cecile could not bend her knees nor rise without using her hands, but she walks badly alone in the room; and in the street, assisted with one arm, the swinging of her body is equally manifest. She stands up with difficulty, her legs apart in an undecided, unfixed, and painful position, which she hastens to abandon; seated, she sags down, with her head bent, twirling with her fingers her apron or her dress; lying, she rolls her head both before and after sleep, which is often agitated; she sleeps drawn up in a heap. Her lax hands take well and receive badly, leave go, and do not fling an object; they are unskilful at all useful doings, even to put on her stockings, to carry a chair, etc. The tact is sickly and impatient, the smell craving for odors, the taste but little developed, audition normal, the look vague and diffused. The voice is quite strong, but its emissions are generally low, embarrassed, very short; the speech is limited to the two labials *pa*, *ma*, which are, in reality, produced by the apposition of the upper lip with the inferior teeth, as if they were labio-dentals—*va* for example; these emissions of articulation are well produced by twos, but so distinct that there is between them the

rest indicated in reading by a period. The other syllables are only attempted, but however unintelligible they may be, they at least prove that Cecile has the sentiment of the function which she tries to accomplish; although it be always contrary to her wishes, or through outside incitations, that she determines to make these poor attempts.

This young person has a tolerable appetite without anomaly, but she satisfies it dirtily and unskilfully; she masticates badly, is constipated, is clean both day and night, salivates constantly, but more abundantly when under the influence of an emotion; she perspires but little, and that almost exclusively on the hands; her head has a peculiar odor, her pulse is small and irregular, her respiration short.

Cecile is susceptible to a little attention and comparison, especially towards objects of toilet, which please her; but she has as yet been able to apply her faculties to nothing intellectual; for the five or six letters, which she knows since about three years, she does not unite into syllables, and she has never been able to recognise more, notwithstanding all the efforts that have been made to teach her the others. Writing, drawing, ciphering, forms, colors, dimension, money, time, etc., are unknown to her. She is fond of music, and tries to sing; she has the memory of time and place; she runs into no dangers, has no instinct but that of possession, vaguely expressed for want of intelligence; consequently she preserves and does not like to destroy things.

She would rather be more rebellious than disobedient, if a severe education had not always controlled her; alter-

nately she is rancorous and caressing; knowing that she does wrong, she persists in it angrily, and ends by losing all self-control. Good, sympathetic, gay, usually timid, sometimes playful, rather imitative, she had some desires of regular actions, which almost immediately died out in her inattention and in her sentiment of incapacity. Without abnormal instinctive spontaneities, she will not will firmly (stubbornness), up to an excess of violence which is called rage, and then she beats persons and things. Her father and mother are healthy, but there is a disease in the family which I have before spoken of. The excellent care with which she has been surrounded alone prevented her being an idiot isolated to the last degree; and I much regret not being able to name a father, a mother especially, who have appreciated that the noblest task was to morally incubate the poor child which had been given them so imperfect, and to pass their lives in giving her each day a portion of that spiritual life which had been denied her.

For, in describing this young girl's condition, I am far from tracing her constitutional and primitive portrait. Cecile was at that time fifteen years old, that is to say, for fifteen years her mother had never left her, had been deprived of sleep and of all distractions, has imposed upon herself privations in order to see her child sit, stand, walk, look, hear, speak, in one word, live; that is to say, that her father had left an honored grade in the army in order to relieve his wife in the pious incubation of their child; that is to say, for fifteen years they continued to recreate her in a common love.

I had doubts as to the possibility of success; but, I repeat, I did not then know Mad. and M. d'O. In yielding to their wishes, I blamed more their confidence than I should have their doubt in opposite circumstances, and I called on them. I listened to the account of what little progress had been made during the last three months (in following out my directions); I verified their occurrence in the person of Cecile, and I made sure that this progress, made upon special points and with limited means, had exerted a salutary reaction upon the functions as a whole, and even upon the external and evident appearance of certain apparatuses. When ordered, the lips were now brought together, the waist was better supported in station, the articulations and the fingers were less lax, and coöperated more firmly in certain manœuvres. I allowed myself to share the hopes of this excellent family, who had full confidence in me. I indicated a precise direction for the efforts of these parents, who signified their intention of executing all my prescriptions; for, truly, it is they, and not I, who have made Cecile that which she has become. I have prescribed, I have demonstrated, I have analyzed, I have allowed nothing to go by the hazard of improvisation or fancy; everything has been foreseen, rendered possible at its proper time; nothing remained but to execute, and this they did and nobly.

“Thanks to her good parents, Mlle. Cecile is hardly recognizable, even physically; her forehead is become higher, rounded, and does not retreat with that angle which depresses the anterior lobes; it is small, but well

arched, with sensible rest at the coronal summit. The cranium is developed posteriorly as well, and to-day, after three years of sensorial, perceptive, and rational gymnastics, measures 50 centimètres (19.7 in.), 10 more (3.9 in.) than at fifteen years of age. She menstruates very regularly; under the influence of the active life she has led, catarrhs are become rarer; the trunk and members have acquired normal habits; the organs of speech are more voluble, having lost their abnormal size, such as the tongue and the lips, which close voluntarily.

General activity, without being great, is applicable; the nervous system is no longer excited without external cause; under the influence of the latter, the disordered manifestations of the former state are no longer visible. Perfect harmony exists between the sensitive and motor functions; spasmodic movements no longer occur; voluntary and coördinated movements and articular flexions are all usual and easy. The walk, as well as ascent and descent, takes place without any swinging; the jump, the race, the jumping-rope and the shuttle-cock, rather difficult exercises of special gymnastics, are become so many games for miss, who now dresses herself, eats properly, assists her mother in the household duties, etc. . . . The tact has lost its unhealthy impressibility, the taste is surer, the look has a precision and at times a persistence really intelligent and voluntary. The voice is normal, but still rather short, and does not always assist articulation, which leaves nothing to be desired in the exercises. Upon this point, Miss C. is to-day like those stutterers whose infirmity, hardly perceptible by their relations,

appears anew at the sight of a stranger; she also speaks much better, more voluntarily and more frequently in the family. Her appetite is more regular, her saliva no longer appears outside, and the constant humidity of her hands has given place to a more uniform perspiration.

Attentive, perceiving well ordinary objects and ideas, she to-day intellectually takes to many social conventionalities, from which she deduces ideas for her guidance. Ciphering, is of the things taught her, that which she comprehends the least; nevertheless, if she does err in counting, she at least knows the value of money; and when sent by her mother to do chores, she sees to it that she is well served and carefully paid, except some error, when the sum asked is more than a few *sous*.

She has desired to learn music, and the piano has been made use of to regularize the voluntary movements of her fingers; I do not speak of the airs she can play and which demand attention; I think a great deal more of her care in counting and writing down the clothes for the washer-woman, which she does quickly and well. I have letters from her, which are neither badly thought nor written, and which were not dictated to her; and she has given me a little embroidered keepsake made by herself alone; she delights in sewing clothes for the children of a neighboring poor-house, and her physiognomy and fingers are quite animated by this charitable idea. Her mother now no longer fears to take her into company, where her reserve, her propriety, and, after a while, her gayety, draw affection to her. In following out perseveringly one of my indications, her father has given her

a taste (which does not mean a technical knowledge) for the Fine Arts, for great monuments, for statues, for galleries of paintings, which to-day are the favorite objects of her walks, and she explains very well what she has thus seen, particularly all that which, on canvas or in marble, recalls Napoleon and the campaigns of Africa. Upon this theme, her tongue loosens, her eyes flash; while listening to her, one involuntarily looks at the decorated button-hole of the old soldier, who never was happier: and he deserves it.—(*Translation as above*).

OBS. XXVI.—*Profound Idiocy—Anterior and Lateral Microcephaly—No Complication.*—Peter W., aged eleven years, of a lymphatic temperament, tall and slight for his age, has no special disease or infirmity; a few pimples, without specific characters, at times erupt upon his face and hands. The cranium is raised at the sinciput, wide at its medium base, slightly inclined backwards and retreating in front as follows: A rather raised vertical crest starts from between the superciliary arches and proceeds up to the summit of the skull; slight flattening or repose of the frontal eminences, whose summit alone is thrown back; rapid retreat from this point as far as the temporal arch, which, far from describing its ordinary parabolic course, approaches more nearly that of a portion of a circle.

The face follows a plan perfectly harmonious with this deformity, principally anterior and lateral: from the orbital margin, which is prominent in the centre and which retreats at the sides, and from the zygomatic arch which slopes outwards towards the ear; from that point

downwards, the base of the face gets sensibly thinner and terminates by a very narrow inferior dental arch, a maxillary bone still narrower, although the chin, quite clean-cut, is a little advanced. Besides, no difference is to be perceived between the two sides of the face and cranium; I note this harmony of the two sides and of the face with the cranium, because it has always seemed useless to me, when it existed, to seek for the cause of the idiocy either in convulsions, or in epileptiform paroxysms, or in some otherwise specified nervous condition, analogous to that of idiocy with chorea, of which I have given an example. (Obs. XXI., see Leopold N.)

The same harmony is to be noticed between the trunk and the extremities, although the whole be slim, the chest specially narrow, and the attachments slight and rounded. The general habit is a little sagging, without anomaly; the organs of speech are perfect, except that the tongue is a little thick and heavy, compared with the narrowness of the buccal cavity.

Peter has no applicable activity, although he expends a great deal, and more than his constitution would require, in irregular, violent, and aimless movements. His nervous irritability is extreme; he often weeps, cries, laughs, sings, without cause, and even without the slightest pretext. When in paroxysms of nervous laughter or weeping, his look assumes a vacancy which would remind one of that of dementia, were it not as brilliant, I might almost say, as a diamond. This sickly, nervous sensibility is developed to the highest point by odors, heat, storms, and music. From the *ensemble* of these symp-

toms, of those we shall presently describe, and perhaps also from the cranial anomaly above described, we might conclude that the perceptive centres, as well as the numerous ramifications of the tissues, are affected. In fact, if the motor apparatus offers neither contractures nor general incapacities, some parts of it do not the less, in certain proportions and with reference to certain points escape the control of the will. The fingers, in particular, can obey this supreme influence only in movements of totality. Tell Peter to raise the index, he cannot; separate the little finger or the thumb of your closed fists, and command him to do likewise, he cannot; he cannot execute partial movements, and therefore would be incapable of trying to learn the piano. More general, or mean movements, which necessitate the action of an entire organ, such as the hand, the arm, the leg, are easier to him; but they lack regularity and precision, and are, besides, interfered with by spasmodic movements.

The great coördinated movements are less disordered (might that be explicable by the apparent integrity of the medulla oblongata and cerebellum? . . . Double question not to be solved on the living subject). It is nevertheless true that the walk is less uncertain in cases of hydrocephaly and circular microcephaly, and that it is not jerky, titubating, as in posterior microcephaly. Ascent and descent are easy enough with the support of a person or bannister; running is possible, but very spasmodic; jumping hardly feasible, genuflexion is difficult, and after it the child cannot rise without assistance.

If his hands seize easily, they let go quickly; they can-

not long support even a light weight ; they receive it from a distance with difficulty, and hesitate much before flinging it, and badly at that.

Peter's tact is irritable, the smell and taste little formed, the hearing uncertain, the look vague and incapable of fixation for three or five seconds. His voice is high-pitched, screaming, his articulation nearly nothing : nevertheless, he can well repeat labials which are told him, even when two are united ; he has but one sound for B and P, that of the latter ; but one sound for L and N, that of the last ; but one sound for D and T, also that of the second ; besides, it is impossible for him to pronounce, even by imitation, C, F, G, K, Q, R, S, V, X, and Z. Erethismus has never shown itself in this child, brought up without nurse or comrades, under the eyes of his mother. He eats little, has a marked taste for nothing besides potatoes, despises water and wine, is fond of *eau-de-vie*, eats nearly alone, masticates incompletely, digests well ; excretions are good, and almost always voluntary ; he only slobbers when much moved by joy, anger, or impatience ; his perspiration manifests itself chiefly in the palms, on the upper lip, and on the alæ nasi ; his head never perspires, but it diffuses an acrid and nauseating odor ; his sleep is short and light, at times agitated ; his pulse normal, his respiration is short but regular.

His want of attention is extreme ; and if he does, by accident, hear the demands made him, he is satisfied with repeating them if they are short ; and if they are long, to repeat, in his confused language the final intonations of the sentence. Without comparison, without other judg-

ment than that which bears upon objects of his choice, without reflection upon any subject: we might allow him to possess a certain spirit of mechanical combination, rather than any other faculty. Thus, although he lives in the very midst of the rich tissues of our manufactures, he is hardly struck by their brilliancy, and his retina is scarcely impressed by their distinctive properties: he cannot distinguish black from white. He awaits Sunday with impatience, the day for walking, but without the least idea of the succession of the days in the week, nor of hours, nor of dimensions. He knows, by routine, four or five letters and the first three digits, without being able to spell two letters, or count objects up to three. He rather often feels the need of singing, and then his look becomes more uncertain and his attention is abolished.

He likes to destroy, and has no regard for accidents which may occur to his person; although rather tender, he pinches, bites, and bites himself occasionally; he is rather insubordinate than rebellious; restraint, threat, the lightest punishment, enrages him; his eyes become wild, the venous plexus of the head and neck becomes congested; he no longer knows anything, and the most irresistible tears and laughter take possession of his features. Besides, he has a transitory knowledge of affection, of petting, and of a sort of delicate and mincing amiability; of heedlessness, of gayety, and of imitation. He has the sentiment of good and evil; but too thoughtless to reflect, he never knows that he does wrong, and often never perceives the evil he has done: which neither prevents his continuing or his commencing anew. Peter firmly wants

what pleases him ; that which displeases others, that is all his will. Except that of his sister and mother, he seeks the society of no one.

His mother is of a sanguino-bilious temperament, active, delicate, and intelligent ; his father, once a robust man, has alone escaped phthisis from among several apparently strong sisters and brothers : I know of no other hereditary disease in the family, nor any serious circumstance preceding or following delivery. Peter has had only the diseases peculiar to childhood ; but delicate, puny, unable to walk before four years, his incapacity has remained the same in all respects, save some little improvement occurring from four to eleven years.

At the first sight, I might have mistaken Peter for a simply backward child ; his grace, his amiability, the gentleness of his physiognomy, all the aspects of his person in calm moments, led to such a conclusion. But a more attentive study of the disorders of his functions, even the psychological characters of his case, in moments of action and irritability, did not allow of this, and I soon had to rejoice at the severity of my diagnosis.

In fact, his case being judged one of profound idiocy, the organopathic appearance indicated the characters of the anterior and lateral microcephaly, the physiological symptoms of which revealed partial and even somewhat general disorders of myotility, and disorders of general and tactile sensibility so grave, that I was obliged, methodically speaking, to proceed rigorously ; cold baths, shampooing, contact of the extremities with heavy and rough bodies, substantial food, chalybeates, repeated and

assiduous exercises of look and speech, standing immobility, and while carrying weights in the hand for a time, which increased from five minutes to half an hour several times daily, such was the rather severe beginning of his treatment; I repeat, it was hard for a child used to gambol, and to do nothing but lounge from one part of the room to another.

But if we consider that, upon this subject, from the most gentle to the most violent moral means had been tried in vain by his family; that the raising of voice in command, the appearance of force, and authority abruptly manifested, stupefied him for a moment, agitated him, bewildered him to the point that his laughter mingled with tears lasted a long time, and rendered him incapable of seeing or hearing—it may be understood how it was that I seemed, for a time, to neglect all moral direction, and to replace it by a series of active exercises, such as walking; and passive, such as shampooing—exercises which Peter could not escape, which meals alone interrupted, which sleep put an end to, which not only *exercised* all his enervated, debilitated apparatuses, but which also concealed in their continuity a tacit, but constant moral direction. For there never seemed to be any question as to my will, or my moral authority over Peter. I said, *do this, do that*, without ever yielding; I encouraged, begged, flattered, with so soft and caressing a tone, where, from another standpoint, it would have been necessary to employ anger and force against disobedience and revolt; I so scrupulously avoided the usual cause of his wildness and of his kind of nervous delirium which I rarely saw, that his laughter

watered with tears, disappeared, at least for me in a few months, and for his family after one year of this disguised moral treatment; and that with regard to his general nervous state, he soon after resumed the habits common to all children. It is true that, excepting at these critical moments, I brought the forms of command, speech, gesture, look, back to their most precise and most significant types, and that I also brought myself back to the habits necessary to authority. Without this precaution, the more precise exercises, the more sustained attention, the more exact obedience which it would become necessary to require of Peter, would have been impossible, and I could not then have successfully combated the disorders of partial myotility and those moral and psychological, and the vices of speech so serious in this child: the most complete obedience and attention on his part could alone render efficacious the gymnastics of articulation and all other exercises, in which Mad. W. has assisted me like a mother resolved to save her child.

Finally, thanks to the firmness I had displayed, all the new exercises necessitated by these partial anomalies were begun. The special movements, those of the hand and eye, were rendered precise; the articulation of all simple syllables was effected by imitation, without too great difficulty; notions, where knowledge precedes reading, were rapidly acquired. Peter soon used the crayon with rare facility, and it was mainly while writing on the blackboard that he learned to read (we must utilize all aptitudes as soon as produced; they are so many natural indications which are worth more than the best systems).

My pupil was then sent to a boarding-school during the hours of recreation; he liked it, and that may be well to do sometimes; he exercised with other children, he ran, played almost, that is, tried to play; and if he did not amuse the other children, what cared I, so long as he amused himself, and his gayety and regularized petulance grew into grace and amiability. It was then, after having spoken unintelligibly for a long time (notwithstanding the graduated speech exercises which his mother and myself had made him, and in which he pronounced very correctly), it was only then, in the midst of noisy animation and the shrill, accentuated tones of his new comrades, that he began spontaneously to pronounce words and series of words intelligibly. At the end of two years he read, wrote, ciphered a little, played heartily, attended recitations respectfully, and obtained his small dose of instruction, half private and half common; I saw him less, though I still met him from time to time; he still progresses, comports himself well, is always rather delicate; his father wishes to give him one of those manual professions which seem invented for persons desiring to live quietly on their labor at the expense of little mind, some activity, and considerable manual dexterity.—(*Translation as above.*)

Obs. XXVII.—*Profound Idiocy—Posterior Microcephaly—No Complication.*—Pauline R., aged nine years; sanguine, sickly, rachitic, small and very spare; had no disease or accessory infirmity, except that she was the subject of ozena. Her cranium rather well formed anteriorly, a little large, and raised at its middle part; was greatly flattened as far back as the superior occipital curved line,

whose slightly marked sinuosity was nearly straight. The structure of the face had, in this child as well, a striking analogy with that of the skull; the eyes were round, the cheek-bones large and prominent, the angles of the jaw marked; then contrarily, the nose was short and wide; the mouth narrow and flattened; the chin heavy, narrow, depressed, like the occipital bone.

The general posture is relaxed, careless; the members flexed; the fingers continually playing with one another. The heavy mouth; the open hanging lips; the tongue often appearing between the teeth; the *velum palati* low; the long, irregular, serrated and striated teeth mostly bad, form a striking physiognomy. The shape is forming; the loins are weak; the chest delicate, and the abdomen is large and hard.

There is little activity in Pauline; no active occupation, little general irritability; there are involuntary laughter, and tears and humming. The depression of the long casing of the cerebellum seems to correspond with certain partial nervous disorders, which are more severe in the motor than in the sensitive functions. In the first place, the sphincters of the mouth and bladder hardly at all act, and but imperfectly arrest the saliva or the urine; mechanical movements, such as self-gnawing, titillation, are frequent; the coördinated are impossible or disordered; seated, lying and standing, immobility is accompanied by balancing; the walk is unequal, swinging and jerky, as in drunkenness; the run and jump cannot be performed. Pauline requires an arm or the help of banisters to descend or ascend the easiest stairs. Her long, exceedingly

weak hands seize and hold badly ; can throw or receive no body whose handling requires strength or skill. She can put on her stockings very poorly ; cannot change her linen, etc., without help ; eats alone, dirtily. The tact is delicate and painful ; cold, which has been so needful to her, impresses her much ; the greatest heat she is insensible to, and it only causes her thick upper lip to perspire ; the smell has some delicacy, and is the only sense whose perceptions Pauline at all seeks for ; the taste would be indifferent if she did not want ardent liquors ; the hearing is normal ; the look uncertain ; the pupils large, dull, and without animation. The harsh voice is always extinguished by a chronic catarrh, whose seat is extensive : she has also a frequent bronchitic cough. Speech is reduced to two or three repeated syllables, as *pa—pa*, *ma—ma*, *ta—ta*, painfully pronounced, but the sense of speech does exist. The generative organs are the seat of secretly kept up irritation, and of a greenish leucorrhœa. The appetite is unequal, but on the whole fair. Mastication is incomplete and uncleanly ; deglutition difficult ; the excretions abundant, and often involuntary ; the saliva often dribbles from the mouth, or is projected in the effort she makes to pronounce ; perspiration is hardly sensible ; the odor of the head strong ; the sleep sound, but preceded and followed by humming and by swinging of the head. The pulse is quick and unequal—this characteristic being increased after each meal. Respiration is difficult, and unusual exercise causes palpitations.

Her attention is absent, but already fixable by the

will of others, if not by her own. She knows many things and persons, but thinks and reasons on nothing; her intellectual faculties act only with regard to a limited number of substantial phenomena, such as her doll, dinner, a fine dress—the sole object she really desires, and the only one towards which she manifests memory, reasoning, precision. She has no conception of money, time, nor measurements. She can neither read, nor write, nor cipher; likes to sing (and what singing!), is orderly, secretive; makes collections; has pets; is inoffensive; is obedient as her apathy will allow; affectionate; caressing; gay; fearful; distrustful; but little imitative. She well knows whether she does right or wrong, without extending this sentiment beyond her common acts; she has the will to do nothing, to stand before a glass, whether seeing herself or not, to know she is very handsome; she then is content, and troubles herself but little about what surrounds her—brothers, sisters, or parents; nevertheless she loves her youngest sister, whom she caresses most, often without seeing, I mean, looking at her.

Her mother is very sanguine, her father nervous and delicate. I am not acquainted with the constitutional diseases which may belong to the family; but if I were asked to say why Pauline is an idiot, I should rather be inclined to attribute her condition to one of the conditions before spoken of as sometimes preceding birth.

Pauline's condition has not been sensibly improved by growth, for the taste she shows for dress is but the manifestation of a natural instinct; it is the result of an example which for children is authoritative, and which is

such as to impress the dullest imagination, when the always rather eccentric novelties of fashion are spread out before the eyes.

Several things were to be considered before beginning the treatment of this child.

1st. The character of the incapacity, which was more patent in the motor than in the sensitive functions, and more upon these two orders of functions than upon those of the intellect; although, here as ever, these incapacities were all connected and ruled by the supreme incapacity of the will.

2d. A second indication, not less valuable, was that of the state of thinness, of softening of the muscular tissue and the sphincters in particular.

3d. Did not the condition of the mucous membrane indicate a constitution difficult to bring back to its normal state?

4th. How far would not that which I was going to undertake to reëstablish, the synergy of these inert and relaxed apparatuses, cause disorders in the nervous system; and what might I not fear from the gibbosity already imminent at the time of beginning my observation.

5th. And more, would not the poor child (in the excess of her localized irritability), destroy by night that which we should do during the day?

6th. And lastly, to start the speech, to force the voice from the catarrhal sources in which it was, as it were, lost, drowned; should we not thus incur the risk of giving an acute and bad turn to a chronic affection,

especially when palpitations occurred and the lungs seemed weak and irritable?

Nevertheless, in the face of all these interlacing symptoms, which seemed successively to prohibit the attempt at educating the defective functions, it was necessary to decide; for intellectual education was impossible before this regularization of the functions, and the age, far from assisting, rather hurried us. Nine years, and nothing done, nothing learned, nothing practicable: it is true Pauline was idiotic; the greater reason for hurrying, would I have answered.

As there was more disorder in the coördinated, than eccentricity in the partial or general movements, I resolved to attack the former, taking care to avoid all exercises which might facilitate bad attitudes and tire the spinal column; at the same time that short, cool baths, followed by friction, and accompanied by a tonic course, should strengthen the tissues. For instance, in order to avoid bad positions, I commanded to Pauline no movements from above downward, no attention of the look which should not raise her head instead of lowering it, as is done in boarding-schools, from which come so many learned and distorted girls; and in the exercises of the hand I avoided all that could, by its weight, or by the inequality of weight from left to right, cause an even momentary disorder in the straightness of the spinal column. Besides, I took care that all of her exercises should be interrupted by frequent rests taken upon a seat appropriate to her condition, the choice of which is decisive in such cases; and more, before allowing her to sit

down, I closed all work of the upper extremities by a dorsal rectification upon the reversed (inclined backward) ladder. Thus, my anxiety concerning the possible, nay commencing, gibbosity ceased after the third month, when I saw Pauline strengthen, straighten, and arch her shape, at the same time that a growth, rare in such cases, began to be measurable; she has grown 14 centimètres (5.5 in.) during the first year she was under my care.

All movements of the hand and arms which require strength or skill became easy to her; she walked, ascended, descended better. I had commenced, almost concurrently with the preceding, the exercises of look; I had recommended and myself contrived such means as I knew would be the least insufficient, to watch and prevent Pauline's bad habits; aromatic fumigations, gargles, and nasal injections had been prescribed, and owing to them there was already less hoarseness and more power in the voice. I then treated the matter of articulation as usual with me, a repetition of which would be tedious; I paid particular attention to the weakness of the labial muscles and to the doughy immobility of the tongue, and Pauline began to emit articulations precise enough at the time when she knew her letters and began to read. Reading was as useful to me to teach her to speak (that is to say, to unite the isolated articulations I had taught her mechanically and by imitation) as writing was to simplify the study of reading, and to fix the attention, impossible until now.

For *passive* attention—attention to that which a third party is doing—is much more difficult to obtain from a

child than the *active* attention which he must bring to an act rendered possible for him ; for, by distraction, his work is immediately interrupted ; the child feels it and dares not be inattentive ; besides, we call him to attention when he acts, when it fails we support it, we provoke it anew when it wanders, which is much better than if there were, between the teacher and him, no irrecusable sign of attention or inattention, the act which he interrupts or continues, a sort of meter of the aptitude we require of him. It is more especially with children more giddy than stubborn, as was Pauline, that this means of supporting attention is excellent. Besides, we should derive no benefit from it if we were to apply it in aid of an exercise to which the child was perfectly habituated : if it is necessary for him to seek too much that which he is to do in his memory or his judgment, his attention expended in intellectual operations, shall no longer as surely or as long direct his look and his hand ; the more he shall try to think, the less time he shall obey, and the master will run the risk of mistaking a simple displacement of function for disobedience. His own awkwardness would have raised this obstacle ; his is the fault : *errare magistrum est* let him always remember.

In order thus to fix Pauline's attention, the most futile means, apparently, were useful to me, provided that, being of easy comprehension, they should tend, insensibly and independently of their principal object, to occupations the most proper for a woman not intended to shine. Assiduously to thread large, then small, buttons upon a brass wire, then upon a needle of cotton thread ;

to thread them by ones, twos, or threes, alternately white, red, black, etc., thoroughly graduating these diverse difficulties which resolved themselves into more than thirty exercises; to pass colored worsted into coarse canvas, to fasten two pieces of muslin by a seam, to button and unbutton series of buttons, to lace and unlace eyelets, to thread needles, cut paper, then clothes; all these were done upon a small, slightly inclined table, nearly as high as the shoulders; for we always had an eye to the shape, in view of which object-writing and reading were executed on a level with the eyes, as well as ciphering.

With attention, other mental operations became possible: it is true that Pauline never understood so well as when it concerned herself, her dresses, her neck-handkerchief, etc., but was she then not a woman! She was thirteen when I ceased to direct her training.

I have seen her since, several times; the last was at a ball, where she, to all appearances, held her place; I did not see her speak to her partner, but after the quadrille she returned to her mother and talked to her for some time, with a marked volubility which pleased me; she soon reëntered a quadrille, where I remarked her, because everything in her interested me; but no one seemed to notice the little remnant of hesitation which I could see in all her movements. Besides, her attitudes did not lack a certain erectness; it was evident that she had been well taught since I left her. I should have liked to have spoken to her. Who, as well as I, could tell her how much handsomer she had grown from the time when she used to spit in my face while trying to move her lips? But as

it would have been necessary to tell her she was most beautiful, I thought her cavalier would do it better, and I forbore.—(*Translation as above.*)

Since, several extreme cases of microcephaly have been under observation in South Boston, Syracuse, etc. On an average, and whatever may be the apparent site of the deficiency, microcephalic children are more alike in their infirmity than any other category of idiots: they are particularly more so than the children grouped confusedly by our ignorance under the appellation of hydrocephalic, who differ so much among themselves in their physiological anomalies. On the contrary, the true microcephalic is quite active, lively, but unsteady. He perceives, more like animals, one thing at a time, than two in correlation, as men do; he is eager and easily discouraged, learning but forgetful, quick but unfixable; very gentle when gently treated, and susceptible of great improvement. But we doubt not that sedulous care must be taken during his treatment, at certain seasons—periods of his growth, and critical transitions of the training, that his brain be not too much taxed and congested, or compressed by undue exertion: any over-work being rendered more dangerous by the unyielding condition of a skull thicker and earlier consolidated than the average, and being known to have produced several nervous accidents whose common result, not the worst, is to stop all further improvement. It was necessary to insist upon this form of idiocy, because it abounds in the institutions. This closes the series of the various forms of idiocy of central origin, and uncomplicated with other pathological conditions.

The first complication of disease or infirmity with idiocy, the most common in certain geological conditions, the most rare here, is cretinism. Therefore, our observations of present cases cannot be expected to equal in vividness the horrors of the Valais; but they will be found true to those likely to be met with in the schools of this country.

OBS. XXVIII.—*Cretinism (or Idiocy) of Holland.*—

Julien M., studied at five and at eight years of age, but not treated.

At *five* this child resembled a large monkey, fighting with hogs in order to dispute with them the slops. His cranium was flattened in front and at the top, face flat, lips dependent, heavy tongue hanging from a slobbery mouth, arms too long relatively to the body, general habit relaxed, glands tumefied, mesentery much developed, hard, and resisting the pressure of the finger. There is no activity beyond that of the appetite; irritability seems concentrated upon the dejective apparatus; sensibility is almost absent. Julien hums involuntarily; swings himself on his chair or on his feet, attitude which he rarely assumes. There is a certain amount of equilibrium, not in his forces, but in his inertia; his motor and sensory apparatuses are without activity; the sucking of his tongue, the chewing of his hand, filling up the interval between his numerous meals.

It is only recently that he walks, and that only to forage food; he only uses his hands to carry things to his mouth; he has neither tact, nor smell, nor taste; his hearing is acute, and his hazel eye emits a stupefied look. His voice is low-pitched and drawling, his speech

limited to a few syllables, not repeated, or repeated very slowly, as *Pa-pa*, etc. His appetite is insatiable, his mode of eating beastly; mastication is omitted; digestion slow and continual; dejections involuntary; all conspire to render this child an object of disgust to the neighborhood. In his mind, all that is not eaten does not exist. Do not call his attention to, or ask his judgment upon, anything which is neither potato, bean, nor soiled salad-leaf; he understands nothing, knows nothing. Music, however, pleases him.

His instincts are brutal, without being aggressive towards persons. Sad, one would call him courageous if he knew what danger was; and disobedient if he knew right and wrong; without any other will besides stubbornness, the greatest violence would not tear from his mouth, or make him throw away the cabbage-stalk which he has picked up from the dirt. If he may hold it, keep it; if he be allowed potatoes and plums *ad libitum*, the rest of the world has no meaning for him; he cares little for it.

At *eight years*, he is just as black, almost as dirty; his skull has grown wider without rising, his face has gained a notable expression of contentment and gayety; his limbs are less disproportioned to his body; his abdomen is still hard and large; he has gained in size, as a whole; and if his person is a little relaxed, it does not want a rather strong and resisting build.

But activity has not improved with this amelioration in health; it always has the same object, without having any other. There is the same general insensibility, coordinated movements have become more possible, but

they are slow, and particularly the walk is always swinging and dragging; the senses have gained little; the voice and speech somewhat improved, still drawl out at long intervals syllables which cannot be united into words. Julien no longer fights the boys to obtain a part of their food; but if he finds in the street a fresh lettuce-leaf but half plunged in mire, then

“ *L'occasion, l'herbe tendre,
Et le diable aussi le poussant, . . .* ”

he eats it. That happens now but seldom, his mother says, and in fact she does not frequently catch him. He only leaves a tree when not a single fruit is to be found. He perfectly well distinguishes the golden tints of the *mirabelle* plum from the tasteless foliage which shelters it; but do not ask him which of these pieces of cloth is yellow, which green; what does he care about that; it is not eaten.

The Curé of the village (may God bless the good pastor!) has had the patience to teach Julien some letters, and he names them all correctly, though seeing, he does not recognize them so readily. It is because of Julien's excellent memory; thus taking advantage of this intellectual peculiarity, he has not been taught to read, but certain fables have been read to him, which he has faultlessly repeated, with his most dolorous and drawling voice. It was a ray of light: since he could not learn to join two letters (which would come later), one might at any rate teach him grammar; no sooner said than done; they used to read Julien a chapter in *Noël et Chapsal* once, at most

twice, and he would stolidly recite it. He was just going to begin a similar *absorption* of the catechism, and the Curé was delighted with his progress, and his mother already spoke of sending him to college, when I chanced to see him again. He had been more than an hour under one of those venerable plum-trees whose fruit he adored, in his way, and I had considerable trouble to induce him to leave. However, I must say to his credit, that at last he followed me in not too bad humor, into an adjoining walk. There we had a little dialogue which, on both sides, I do not consider as witty enough to be entirely reported; but certain passages in it will throw more light on Julien's character than would the most detailed analysis.

“Seguin.—Good-morning, Julien.

Julien.—(Slowly and swallowing a plum) Good-morning.

S.—Do you recognize me?

J.—Yes.

S.—Where have you seen me?

J.—Yesterday.

S.—Yesterday, I was not yet arrived.

J.—Father has told me your name.

S.—Then you know my name, my little friend?

J.—M. Seguin.

S.—Well, do you recognize me; have you seen me before?

J.—Your name is M. Seguin (after a long effort); father told me so.

I insisted much on this point without obtaining any

other answer. I touched the subject of his progress, which he had so often heard spoken of that he was quite fond of listening to it.

S.—You now learn well, do you not?

J.—Yes, sir.

S.—What do you learn with the Curé?

J.—I will repeat some grammar to you.

S.—This morning, what have you learned?

J.—The catechism.

S.—The whole catechism?

J.—Shall I recite you my catechism?

S.—No, my friend; but tell me what is an article?

J.—(A little faster than when he speaks). The article is a little word which is placed before the noun; we have but one article, *le* for the masculine, *la* for the feminine.

S.—That is very well. Will you give me an example of a noun accompanied by an article?

J.—We have but one article, *le*. . . .

S.—Can you tell me the name of a thing which you know, and which requires an article?

J.—I—do—not—know. (This is answered much more slowly than he has recited).

S.—At least you know an object which has a name, a substantive?

J.—I—do—not—know.

S.—But you know what a pronoun is?

J.—(Quite rapidly.) The pronoun is a word which stands in place of a noun.

S.—In place of my name, what pronoun would you make use of to designate me?

J.—I—do—not—know.

| S.—Sometimes you say to your mother: Will *you* let *me* go into the garden?

J.—Yes sir, but she will not.

S.—Now listen. When you say to her, will *you* let *me* go into the garden, do you not use a pronoun?

J.—I—do—not—know, etc. etc.

Dr. Guggenbühl mentions an Alpine cretin which seems to have had many analogies with this one. However, by dint of care, he was at last made a sort of *savant* who knew botany pretty well. Did he become more judicious, more spontaneous? That is not mentioned. As for Julien, the same chance which brought him to my notice, has also removed him; but I very much doubt whether his botanical learning ever extended much beyond the interesting order of *Solanaceæ*.

This is a case of slight cretinism of the low country of Belgium. The next, more characteristic, is from the low land of East Virginia—(*Translation as above*).

Obs. XXIX.—S., 17 years old, is tall, straw-colored, always seated in a bent and crouching like posture, balancing her body backwards and forward, moving her head in a rotatory manner, and glancing her eyes from side to side; triple automatic movement. When she has no amulet to amuse her thin fingers, she keeps them in her mouth or extends them like feelers at the approach of some body; her hands hanging like the fore-paws of the kangaroo. The face is small and regular, the forehead smaller, and the rest of the cranium smaller still, though very harmonious in their proportions, which are above

microcephaly proper, but under the norma. The neck, poor at its connection with the head, spreads nearer the shoulders, manifestly ornamented in front with a soft and discrete goître. There is slight hemiplegia of the right side, whose hand and foot are colder than the left.

As soon as she is aware of the presence of strangers, she does not look at them; but her triple *balancement* of the body, of the head, and of the eyes, increases; then extending her hands, she begins in a half-plaintive, half-musical tone: "S. wants an apple; S. is a good girl; S. wants this; S. wants that;" without cessation. But if the visitor comes near enough, she, without looking at him, touches delicately his garments with her hands or lips if she can, trailing her nose along the parts she tries to appreciate by deep inspirations. To the question: "What are you doing there, S.?" she would answer: "S. smells the doctor," etc., always speaking of herself as if she were a third person.

If she is coaxed or impelled to change her crouching posture, she cries, and bites her hand in a flood of saliva; altogether looking lonely and out of sorts among the lowest idiots, which are generally younger than she, mute or not so garrulous as she is; but altogether very different from her.

She is absolutely incompetent to do anything. The only thing she is eager to secure, like a studious child, is a book. She holds it with her left hand, at the same time dangling her right away. She smells and grazes with her lips the cover of it and every successive page, till she knows the whole of it, not by heart, but by the

taste, touch, and smell. She varies these modes of sensorial studies of the book by blowing a strange tune through its pages, diminutive imitation of the long sorrows told by a night-storm to the Italian poplar. Thus used, her favorite book is soon, not well thumbed, but so profoundly lipped, that there is an indentation more than an inch deep in the edge of the leaves of the book.

But when her parents visit her, she comes out from that vegetative life; rises and walks willingly, though awkwardly, to meet them; and her bowing propensities take quite a touching turn. Seated between them, she straightens her forward bend and balances her body, no longer forward and backward, but sideways from the father to the mother. Her hands hanging yet, but full of life, play rapidly right and left like fans; her eyes half shut, moving swiftly, but not looking; her head grazing alternately one and the other; occasionally she wants to kiss them; oftener she prefers sliding her lips along the sleeves of the coat or of the dress, saying in her monotonous lullaby: "Father! Mother!" It is not yet six o'clock (the time of their departure), "Father! Mother! you love S. don't you? Father! Mother!" Then she asks the news from home, but never speaks of going home herself; if questioned on that subject, instead of answering she repeats: "Father! Mother! you love S.! S. wants an apple," etc., etc. Sometimes she looks for something that belongs to either of them, as a knife or glove. She seizes it without looking, and keeps it under her nostrils during long inspirations; and soon again she follows the forms of their garments with her lips or with her sickly fingers,

which collect those unearthly contacts and transmit their impressions to the brain. Who could appreciate the feelings of the mother and father at parting after such an interview.

And yet, though apparently incapable of receiving any education, properly speaking, her attention to the phenomena perceivable by the ear, if not to those perceivable by the eyes, has become remarkable; in a single year that she is in the N. Y. Institution, she has improved mostly in the qualities which promote personal happiness—as obedience, quietness, order, and certainly became more contented and less irritable.

OBS. XXX.—D. and G. are twins, 11 years old, resembling cretins by the color of their skin, the prominence of their thyroid cartilage, with the husky voice it produces, and by their undersized stature, with a heavy head, whose thick bones are compressed circularly at the base. These brothers are perfectly alike in shape, color, proportions, voice, gestures, habits, and modes of perceptions and feelings, even to peculiarity; except that G is a mere attenuation of D. in everything; a little more than his shadow, a defaced copy; his like, but not certainly his equal. To educate them, the immediate difficulty appears to have been that G. would do nothing but what D. had done; acting, speaking, willing after his brother; nothing beyond. This subordination of one life to another was so complete that it appeared impossible to educate the weaker, at least without separating him from his stronger prototype; and though kept together in the Institution, it was judged necessary to separate them

in the school. This plan seemed to work pretty well, since under it both children improved. But D. kept always far ahead of G., both making the same kind of progress, only in the previous ratio.

Nevertheless, suspecting that the old plan of Nature could with advantage be at least alternated with the rational process, we asked D. if he would like to teach his brother to read; and he said with a decided expression of pleasure that he would like it indeed. Accordingly we forthwith sent him after G., who came close to him and began to read monosyllables, D. correcting his numerous errors encouragingly. We remained purposely at a distance, apparently busy with some other children, to leave the twins all their liberty; and they continued faithfully, one to read badly, the other to correct the errors to the best of his knowledge, and with a charming indulgence, till the sounds of the bell broke all the studious groups and put an end to their exercises also. Then having noticed how near one another they stood in reading, we called them again, and having put them a little apart, we began talking to them; when insensibly they came nearer and nearer till both seemed in the act of auditing, united sideways, as are the Siamese twins in their flesh. Purposely separated again, they once more came in contact by that insensible process which looked more like attraction than movement. All the while they were entertained about their preceding lecture; asked how they would like to read and study together, etc.; D. would say that he would like it very much; and G. would soon utter the same assent in a lower tone, word for word;

every movement of D. being followed by the same from G. ; they keeping all the while close together ; their features more expressive of tenderness than of idiocy. When the rather painful experiment was over, D., as ordered, led G. back to his room, and before leaving him, one hand yet on his shoulder, told his brother, with his confused articulation and husky voice, in quite a paternal manner : " I will teach you to read, my son."

The reader, dissatisfied, as we are, with the incompleteness of these representations of idiots affected with several forms of the wild cretinism of the lowlands, must look to the book of Dr. Guggenbühl mentioned in the Bibliography, a book likely to be found rich in pictures of cretinism aggravated by idiocy.

As cretinism affects evidently the skin, we cannot dis sever from it a form of idiocy in which the skin is furfura ceous. Our incomplete studies do not permit of its actual classification ; but it is better to leave things by themselves, than to force them into classes which have their foundation only on paper.

Obs. XXXI.—M. A. is nine years old, very small of her age, but quite gay and healthy. The rounded or shortened termini of all her lineaments, the truncated nose, the unfinished-like fingers, the scanty red lids, the cracked tongue and lips, the cranium so evenly rounded like a cylinder, and the white, pulverulent covering of her rosy skin, all contribute to make her look half pitia ble, half ludicrous. But with all her external drawbacks, she is fast improving, and a child deserving respect and affection. Other cases of a similar but aggravated char-

acter have been observed, but the description of their repulsive symptoms would not make us less ignorant of the true nature of their affection. We have not seen enough of this affection to express any opinion upon it, but as a conjecture: and we hazard the hypothesis that it is a variety of idiocy connected with some form of hereditary cretinism. One more fact concerning them: several of them died young, of pneumonia, metastatic of erysipelas. The child chosen here as a good representative of the kind, M. A., shows that, in spite of their disagreeable appearance, they are morally good children to deal with; that, in spite of the heaviness of their cracked and thick tongues, they may learn to speak, and even become quite loquacious, with an incorrect utterance; and in spite of their apparent stupidity, they may acquire a stock of knowledge and of practical common sense; for in ten months M. A. had overcome the major difficulties of the training and began to learn and to behave like ordinary children—she but recently cast away as repulsive and incurable.

Now, unavoidably, comes the painful subject of idiocy complicated with epilepsy. To do it full justice, it ought to be represented in its triple aspect: 1st. Epilepsy causing idiocy, imbecility, dementia, or paralysis. 2d. Epilepsy supervening in cases of already confirmed idiocy or imbecility. 3d. Idiocy and epilepsy, both working independently or reciprocally the destruction of the same being. We have studied the subject far enough to establish these distinctions, but are not prepared to present living types of them. Therefore, excepting a reference to Obs. II., we mention only the two following:

OBS. XXXII.—T., eight years old, finely built from head to foot, idiotic of the lower type, epileptic from infancy. What is noticeable in him is his insensibility to what causes pain to ordinary persons (hence he tears his skin and even his flesh without apparent suffering); his fondness for music (he sings with great taste and purity, though he cannot learn anything else); and finally, his mechanical speech, that is to say, one emitted involuntarily, very different, even in its occasional abundance, from the real language, which is always a faculty exercised by the mind more or less under the control of the will. The other child, equally idiotic and epileptic, was attended with uncommon care by Prof. T. Richards. This pupil made several strides towards a cure, which were subsequently defeated by the more powerful action of the recurring spasm.

The complication of idiocy by chorea and other nervous diseases is well exemplified in the cases of the two following pupils of Dr. H. B. Wilbur, and described by himself.—(Annual Report, etc., 1866.)

OBS. XXXIII.—E. C., a girl twelve years old, subject to chorea nearly from birth, and also deaf and dumb. (See Obs. XXI. for the complication of chorea, and Obs. XLII. for that of deafness.) Had a pleasant face when the muscles were quiet. Began to walk at three years old, but walked, when admitted to the asylum, with a rolling motion. Understood signs to some extent. Was very amiable and obedient.

“Of course in this case the instruction was entirely through the eye, and the advantages in such a case in

this institution will not bear comparison at all with those of an institution for deaf mutes. Her chorea and her mental deficiency precluded her admission to such an one. She remained in the asylum six years, improving steadily all the while, and left it able to write, to read a little, and with some knowledge of the relations of numbers. In household matters she acquired no small degree of proficiency—though when she came she had very little control of her hands.

“She could sew and knit, work figures in colored worsted from a pattern. She was very useful in the dining-room and in other household matters.

“She was retained at home at the last vacation, though quite anxious to return to school, because in the judgment of her friends the object of her having been sent to the asylum had been fully accomplished.”

“M. C., a girl ten years old, sister of the foregoing, came to the asylum a year later, the mother being induced to send this, her only remaining child, by the marked improvement witnessed in the case of the oldest. She resembled the older sister, but her infirmities were less marked. Her chorea was very slight; her walk better; she had more control of her muscular system generally; she was only slightly deaf, and this fact would have given her a great advantage in mental development over the former, only she was one of the class of cases where there is what may be called a deafness in the perceptive ear. She did not notice sounds unless very loud or unless her attention was first attracted in some other way. With this peculiarity, she, of course, had a very limited comprehen-

sion of language unless accompanied by gestures or signs. She said but a few words, and these quite indistinctly and with the same want of modulation and slight timidity of utterance commonly noticed in those who have become deaf.

“She knew nothing of housework, and could sew but very little. As she was the youngest child in the family, she had been waited upon and petted in no small degree; and, whether as cause or effect, she manifested great childishness of manner. Her disposition was amiable. She has now been in the asylum five years. Her nervous manner and motions have in great measure disappeared. She listens as well as hears better. She has learned to comprehend language. She reads quite well in the elementary reading-books of the school-room. And she comprehends the meaning of the printed page not directly through the medium of the eye, as in the case of deaf mutes, but indirectly, as the printed words are the signs of spoken words of which she knows the meaning. She can and does talk connectedly and sensibly upon matters within the range of her intelligence and knowledge; a slight lisp being the only defect in her speech.

“She can enumerate and read numbers as high as thousands; can add, subtract, multiply, and divide large numbers with ease. She writes very well, imitating her copies with much exactness. She exhibits considerable taste in drawing, and her drawing-books, in the opinion of her teacher, would compare favorably with those of advanced classes in our common-schools. This mental progress had to be made at the outset under the difficulty of contending against a sense of hearing practically closed.

“Out of school hours she has received and responded most favorably to the instructions that fall within the duties of the matron. She now requires no help in dressing and undressing, and assists in the care of other children. Her hair and teeth and dress are properly and neatly cared for by herself. She makes herself very useful in washing dishes, sweeping, making beds, etc., etc. At the table she conducts herself in a quiet and lady-like manner, and when invited out to tea (at the table of the Superintendent) she manifested considerable tact in watching and following the observances of the table. She is very handy with her needle. Can sew and knit as well certainly as most girls of her age. Has learned several kinds of fancy-work, and can reproduce a pattern with worsteds upon card-board or canvas without help of any kind.

“Her judgment and her industry is such in work of any kind, that she can be trusted to plan and do an entire piece of work without direction or supervision.

“She is, in short, capable and faithful; obedient and amiable.

“The results in her case are more satisfactory than in that of her sister. At the end of the present year, 1866, she will be returned to her family, able to assist efficiently in household matters, able to take pleasure for the remainder of her life in the reading and writing, and other school acquirements she has learned here, and a source of comfort to her family.”

The same complication of idiocy with chorea has been noted in OBS. XI., presented above, as illustration of the characters of profound idiocy. Our successes and failures

in treating choreic children, idiots or not, has led us to establish a complete difference in our prognosis, according to the time of invasion of chorea. The earlier manifested the more difficult to cure, is the sum of our personal experience.

The following are examples of idiocy, with automatism of various forms :—

OBS. XXXIV.—W. G., æt. ten, pale, delicate-looking, regularly built, eyes deeply set, came to the New York Asylum six months ago, with a swinging gait, nearly mute; helpless, except to feed himself, and absolutely uneducated. He was used to rub his head against anything, so that the back part of it was particularly shorn of hair. If interrupted in that automatic practice, or otherwise displeased, he would scream, and throw himself on the floor in despair. Now he has lost the automatic motion of the head, begins to read, to draw a little; stands in decent attitudes, takes cognizance of what happens round, and when called comes forward with an evident expression of willingness; otherwise he is yet shy, distant, and cheerless. As he is to-day, William looks like a backward child; as coming first from home, before the substitution of regular to automatic movements of attention to vacuity, of incipient forwardness (gently provoked) to diffidence and wrath, he was ranked among low idiots.

OBS. XXXV.—Wal. is a microcephalus of a low grade, and after several years of training has improved enough to be quite happy, and of little use. He would not be mentioned here but for the peculiarity of his automatic

movements. These, instead of being acted by the hand, or limbs, or fingers, consist in a noisy snap of the bones of the shoulders, more audible than that produced by the knee or the fingers, and which he seems capable of reproducing at will. To hear that crepitation repeated in the otherwise uninterrupted course of a lesson on A, B, C, or colors, causes a feeling of discomfort which time nor distance may attenuate; we hear it yet, if we cannot explain it.

The following is a curious example of mechanical movements:—

OBS. XXXVI.—Cath. was known, from six to twelve years, to live on the floor, bumping her head, and being quite unmanageable. Several years of physiological training have taught her to walk, stand, use her hands for ordinary purposes, and behave generally. She is become stout, healthy and orderly, except in one respect. The automatism which primarily urged her to strike with her head has concentrated its force in the elbow, which she now propels violently against persons nearing her. Let any one come to her side, and strike she must. If you try to protect the new-comer by stringent orders, you will succeed only so long as your eye is strongly riveted upon the elbow; this desire is irrepressible indeed, for as soon as your eye does not corroborate your command, strike she will, like an electric eel. Curious and rare example of automatism transferred and transformed, not cured, and preserved in the midst of the numerous normal movements newly acquired by education.

The two following cases of idiocy in its apparently worst forms, and long supposed to be of the worst kind, exem-

plify very well the growth of the affection, even when it is supposed to be brought on by simple isolation of peripheric origin, and the curability of the same when treated on the principles of physiology.

OBS. XXXVII.—Willie, a stout, middle-sized boy of about twenty-four, stands smiling with a grimace caused by a remnant of chorea, and with a clumsy shutting and opening of both hands, which seem to call for something to do, as they actually want. His mate Nattie is gone; more infirm, smaller, sweeter, but not truer than Willie. Both taken from the Randall's Island Hospital, N. Y., as the lowest specimens of idioey. They were from birth choreic, and more or less affected with general paralysis. Neither of them could speak, nor appear to hear or understand, except a few simple commands expressed more by gestures than by words. When they started for Syracuse, the resident physician of the Island expressed his opinion that the choice of these two pupils from among so many other idiots was an unfortunate one, because they could not possibly do any credit to the new State Institution just opening for idiots.

“I hurried them,” says Dr. Wilbur, “into the bathing-room, and brushed, and combed, and aproned them after their journey, before they should be seen by the teachers; for I feared the discouraging influence upon my new assistants of seeing these poor unfortunate children. But they soon felt the genial influence of our special system of instruction adapted to their want and deficiencies, and returned a daily recompense for the care and labor bestowed upon them.”

Three years later, the President of the Board of Trustees of the School, Mr. James H. Titus, received from the office of the Alms-House of New York, the following note: "We must not forget our two boys, Nattie and Willie. You, I am sure, remember their condition when under our care at Randall's Island; to see them now, under the tuition and care of your institution, almost in full possession of all the ordinary faculties of the mind, taught as ordinary children are, receiving the benefit and comfort of habits of cleanliness and order, and by means of special treatment, made participants in the enjoyment of life, as well as an appreciation of a happy future, calls from us a united expression of our confidence in the asylum."—Signed, Simeon Draper, President of the Board.

Nattie and Willie, examined again in 1857 by the Commissioner of the State of Connecticut, are represented in their report to the Legislature, which resulted in the foundation of a school for idiots, as greatly improved. "Both now exhibit as much intelligence as ordinary children of their age. Neither speaks very intelligibly, in consequence of some paralysis still existing; but both are rapidly improving in this respect; both write well on the black-board. In thorough knowledge of grammar and geography, very few children of their age are their equals. In a very severe and protracted examination in geography, embracing minute details in regard to the topography of most of the countries on the globe, and many particulars in regard to physical geography, and in drawing maps upon the blackboard—though with paralyzed and contracted hands, neither they nor the other members of

a class of six or seven missed a single question. In grammar, both supply adjectives, nouns, verbs, and adverbs to given nouns and verbs with remarkable promptness and to an extent which would have severely tasked my vocabulary. In arithmetic, both exhibited perfect familiarity with the ground rules, and Nattie gave at once any and all multiples of numbers, as high as 132; and added, multiplied, and divided fractions with great readiness."

Since the legislative document from which we take this extract was written, the two Commissioners, impressed with the social and scientific importance of this field of labor, have become, one, the Superintendent of the Connecticut State School for Idiots; the other has gratuitously constituted himself the historiographer of idiocy in this country; and has done more than any other man, by the multiplicity and cleverness of his writings, to make the subject popularly understood, and to prepare the nation at large to consider as one of the social duties the care and education of idiotic children. To come back to our children. An incident related by the earlier teacher of idiots at Albany, Miss Clark, may give an idea of Nattie. One day that strangers were admitted, one of them presented to Nattie a problem that he knew the child had not yet come to in the course of his mathematical studies. Miss Clark saw it, and Nattie saw it as quick as her, for his large lustrous eyes were inquiringly upon hers, which being speaking too, seemed to say to the disconcerted boy, "You must solve it." At this mute order, Nattie, walking on the tip of his crooked feet, and holding the chalk in his crooked hand, came warmly to kiss her, as if to say: "Never mind,

I will do honor to your teaching;" and turning to the black-board, solved the problem. A woman may grow old and careworn after that; she wears a jewel that the pawnbroker cannot stow away, and her children will show it with pride. Nattie, with all his acquired refinement of intellect and feeling, remained too much of a cripple to do any manual labor; he is a tender companion to his mother, and appreciates the benefits conferred upon him by the Institution.

Willie is less refined, though very sensitive, but more practically improved. He has not left the 'asylum, where he finds always plenty to do; his notions of social duties are connected with it, and only second to his religious principles. He weeps sincerely at the news of the assassination of the martyr of Springfield. Having been very serviceable, not only to the Institution but to casual inmates, he was often rewarded for it, and now possesses a little pocket-money which he loves to increase. Nevertheless, on two occasions, to our personal knowledge, he showed that there was something higher than money in his mind. Once he worked cheerfully, out of respect for one who he knew could not repay him; and at another time, in prevision of some expected reward, he managed to let out that the present of a life of Jesus Christ would be more agreeable to him than money. His moral sense is as high as it could be in any human breast.

Obs. XXXVIII.—C. is a good type of idiocy, complicated by hemiplegia. When six months old, he had daily convulsions, which lasted six months more, and were followed by a severe attack of pneumonia. After this it was

discovered that he was hemiplegic. He walked late and clumsily, humming sounds instead of talking, and slobbering profusely. In that dull kind of infancy, he took interest neither in things, images, dolls, or the like; but was mischievous and stupid, ungovernable and uneducable. In 1862, when eight years old, he was admitted to the N. Y. School, and put to a severe training to equalize the functions of his body, right and left. His intellectual and moral education was pushed with vigor and success, and after three years, C. stands, as nearly as possible for an idiot, on an equality with ordinary children, and his two sides feel and act nearly alike.

The following case is taken from the reports of Dr. Wilbur to the N. Y. Legislature :

OBS. XXXIX.—“T., a boy six years old, came to the institution of Syracuse, in January, 1862. He had convulsions from eight months to two and a half years old, almost daily. They left him with paralysis of one side. He sat and walked also quite late; and when entering here walked very clumsily, often falling. He could not dress nor undress himself. His want of intelligence was clearly to be seen in his countenance, in his carriage, and in his very hair, even to a casual observer. He understood only the simplest language, such as the ordinary commands addressed to young children. He began to try to speak at two years old, but could say only a few words, and those indistinctly, and in an imitative way. He did not discriminate the most simple forms and colors; he had no idea of numbers, and though brought up under intelligent parents who attempted to teach him,

nothing had been accomplished by their efforts. Once in the school, there were, however, very soon indications to the experienced eyes of those connected with the asylum, that he was a promising pupil.

When he returned from the last vacation his mother sent a statement of his comparative condition from 1862 to 1865, from which the following is an extract :

“Since his residence in the asylum his health has improved, his countenance looks more fresh than formerly. Then he fell down very easily and often when walking; he was awkward in the use of his arms and hands, and there was a stiffness of the fingers. He now walks with much more firmness, and has acquired a very good degree of control over his muscular system, as is manifested in writing, etc. His bodily restlessness has given place to mental activity; he now likes to play with other children; formerly he preferred to amuse himself alone.

“He now wishes to wait upon himself in all matters. We find him much more gentlemanly at the table; he now selects such food as he prefers, and tell us when he is satisfied; formerly we were obliged to guess what he wanted, and how much. He can dress and undress himself almost entirely without assistance, washes himself before meals, combs his hair and brushes his teeth without being prompted. He now has considerable regard for dress, and notices untidiness in others.

“He now seems to understand nearly all we say to him respecting plain every-day matters. When he entered the institution, he could hardly speak a word distinctly; but

now he speaks most words quite plainly, every day using a greater variety of words. He now converses upon almost as great a variety of subjects as any child of his age and experience. His memory is more retentive. He remembers and relates many incidents which have occurred in relation to his teachers, associates, school, etc. His attention is much more readily fixed upon any object. When he left home he hardly noticed any object; now he seems as much interested in what is going on in the fields and streets as most children; he is particularly interested in machinery.

“He can read easy lessons, writes well upon a black-board, and astonishes all who hear him in numbers.

“He remembers dates surprisingly, and greatly prefers a hard question in multiplication to an easy one. He is more steady and quiet; has attended church every Sabbath, when well; behaves well and orderly, and is careful to imitate others in his deportment. He has also attended Sunday-school, committing easy lessons. He is less selfish; more ready to share his gifts with his sisters, and yields to their wishes when at play. He recognizes the distinction between right and wrong much more clearly, talks about the sin of telling falsehoods, thieving, etc.; notices improper talk and conduct in other children. He reasons quite well upon little practical matters; he has much more self-control than formerly; is quite obedient, understanding the reasons of our requirements. Better yet, if he manifests a rebellious spirit, a little calm reasoning will usually quell it; he was always very affectionate, yet very passionate. He assisted his father a

little in the hay-field, though of course he is too young to labor much.

“In fact, we are disappointed in no respect in his progress and improvement at the Institution, unless it be that he learns so rapidly. We did hope that he would recover the use of his limbs in walking to a greater degree, though the Superintendent gave us no special encouragement in that respect. He has learned reading, writing, and spelling sooner than we dared to hope; while in figures his progress is most remarkable. We feel that our warmest gratitude is due to all connected with the Institution.”

For idiocy with paraplegia a reference to Obs. V. and XXXIX. will suffice, inasmuch as this complication does not seem to aggravate it more than the preceding. The next case is an example of local paralysis found among deficiencies of the will to command the movements; very deceptive form indeed, and also remarkable for its contrast with the cases of mutism due to deficiency of the will. (Obs. XLV., etc.)

Obs. XL.—M., a well-built, robust, florid girl of thirteen; forehead low, sutures rough, and occipital bones laterally depressed, but without real deformity of the skull. Expression sad and vacant, hands extremely delicate in proportion to her general build; could not help herself when she came to Syracuse nine years ago. At that time she was a perfectly helpless young girl, for with her motor functions unimpaired, she would not stir for hours, as if she was paralyzed; but on a sudden she would run like a deer if frightened or otherwise impelled to do

so ; evidently the function of locomotion was perfect, but the will, even instinct, had but rarely command over that function.

But as for the function of speech it was just the reverse. Though a fine hearer, she was dumb, not only in articulate words but in voice ; and if she needed or was provoked to speak out, she would throw her hands around her neck as if to say with the anguish of a suppressed will, "I can't."

This trait, as well as the comparative harmony of her movements, when she was incited to move at all, seemed to rank her case among those of superficial or peripheric idiocy ; though other symptoms, and the refractory condition of her mind, or *idiotism* proper, to use here in its right sense the word of Pinel, would leave room for the suspicion that she was also affected with some deeper disorganization, which, without disturbing much the harmony of the movements, produces the intellectual results consequent upon profound or central idiocy ; but there was, for us at least, uncertainty both ways.

She did not accustom herself to the life of the Institution, and could be scarcely improved either by individual teaching, or by immersion in the general training ; she remained unmoved, mute, vacant, and looking far away from surrounding objects as if to see her home in Westchester county.

Five years later we met her there, seated among her brothers and sisters. She rose instantly, giving an unmistakable evidence of recognition. She looked coarser than at Syracuse. In partial furtherance of the plans of

the school, she had been taught by a younger sister to clean the dishes and do a few other things, which she does like an obedient, but absent-minded child. Since, we have seen her occasionally, mostly at the gate; her large chin reposing on her thin hand, her head slightly reclined, her eyes looking farther than any of us could see. If a friendly face happened to pass, she would make with her head and hand a gentle bow of recognition, and relapse into her absent mood. Hours thus pass away; dusk finds her in the same attitude; the colts prancing from the pasture want admission at the gate; M. claps her hands at their gambols; her young sister leads the colts to the stable, and Mary follows her gently home.

In her case the trial at education, which failed, was very short, but it is doubtful if a longer effort could have succeeded better. And another doubt comes unavoidably across the mind: was not M. more happy in her vacant and quiet state than educated to work ten hours a day in competition with the slaves of the factory?

The following subject presents the curious spectacle of movement commenced by the will and terminating in a spasm, by which example will be ended the series of idiocy allied to the varieties of paralysis:

OBS. XLI.—A stately, fine-headed, open-faced boy of twelve, that nobody would judge idiotic at first sight; but he never behaved like other children. His forwardness was vacillating; his brightness issued from quick and accidental perception, not from sure understanding. Though he speaks well and rather fast, he will often, instead of answering, repeat the last sentence of what is

told him, in an awkward and unmeaning manner. (See Obs. XLIII.) He reads some and can count a little, but he progresses more slowly than other pupils considered lower than he; being decidedly an amiable boy, but an impervious scholar. However, the test of his infirmity appears more manifestly when his muscles are called to systematic exertion. Then, and particularly in the large movements of totality, as in throwing with energy an arm up or a leg forward, F. begins these movements as other children of his group do; but in the course of their execution these movements of his become disordered and terminate in a kind of spasm, which makes the limb deviate from its ideal point of destination. It is evident that his will, which directed the beginning of the movement, ceased at a certain stage to direct it; wherefrom it commenced regularly and ended spasmodically.

If there could be any doubt as to the paralytic nature of the affection, to dispel it, it would suffice to see how the spine seemed convulsed at the time the disorder of the limb begins. Moreover, a case of *paralysis scribarum*, which occurred in our practice, makes it surer by analogy. It happened after an immoderate use of the pen; the hand beginning to write a few words and suddenly the thumb giving way, unable any farther to manage the pen. With the exception that this impotence takes place in the middle of a series of repeated movements of a small organ, instead of in the course of a single, ample movement of totality, we do not see any essential difference in the two affections. Of course they do not come from the same origin; but do all the forms

of paralysis do so? . . . As the question stands, F. is one of those children whose keeping will more than repay paltry expenses, provided the study of their infirmity begins early, continues though life and does not stop after death.

Of idiocy with surdi-mutity, we have seen incidentally two cases in Obs. XXXIII., whose object was mostly to present idiocy in combination with chorea. Here we will compare two cases of surdi-mutity, leaving in the shade any other symptom, even chorea in one of them, to its turn.

OBS. XLII.—T. had fits when young, was wild and thieving with the boys when brought to the Syracuse Asylum. He was almost absolutely deaf and entirely mute; by which expression we mean the double absence of the sounds producing human voice and of the articulation which typifies the speech. He was choreic from birth, we suspect; could not fix his eyes, nor keep the saliva from streaming from his open mouth on his red and sore chin; he fed himself imperfectly; did not dress; did not soil his clothes or bed, but was entirely repulsive and disorderly otherwise. His *idiotism* precluded his admission into the school for deaf mutes, though he was one of them; but happily, surdi-mutity was not considered a sufficient cause to refuse him admission among the idiots, for he was one of them also, by double reflex action on the brain of the privation of one mode of perceiving through the ear owing to his deafness; and likely owing to the uncertainty of his mode of perceiving through the touch, owing to chorea: double cause of exclusion, besides idiocy, from the common school.

However, his education began with the teaching of things through the eyes and through the tact ; from which he passed to the manual alphabet and writing. His progress was slow, but followed the improvement of the steadiness of his nerves, acquired in the practice of special gymnastics : chorea disappeared steadily. Not only did he not lose the little of hearing he had when coming in contact with idiots ; but great pains were taken to keep up the exercise of that function ; and the result of this care was, that instead of remaining absolutely mute, he began to talk a little. He was so much improved in intelligence and demeanor at the end of three years, that being considered out of idiocy, and yet unable, on account of his surdity, to be taught in the public school, he was received in the deaf mute institution.

There, in ten years of training, he received a good education and was apprenticed to two trades, book-binding and harness-making. But, however beneficial may have been to him in every other respect the present mode of teaching the deaf mutes, it made his ear fall, by absolute disuse to sounds, into absolute deafness, and his unexercised voice into absolute mutism. The school for idiots had done better in this respect.

Nevertheless, he is now upon his own hook in this world, and has earned his living since two years. In March, 1865 (when we were just studying these children), a fine stout young man came into the New York State Institution with his slate under his arm ; it was T. An exercised look only could yet detect in his open manner the twitch of chorea. He spent a few days there, enjoying the com-

pany of a few of his old schoolmates and his school-mistress, behaved with propriety, showed a sense of gratitude, and a sound judgment in general matters. Not finding employment in the city, he returned to Albany; but it was evident that he would have liked to remain near the place where he had his fairest childhood recollections.

A. presents quite a similar case with a somewhat different issue. Not quite so deaf, nor so absolutely mute as F., he would not hear, nor speak to any purpose. Incapable of being taught in the public school on account of his mutism, or admitted in the deaf mute school on account of his idiocy, though it was superficial, his double infirmity was harbored in the school for idiots. But there, instead of being favored, these infirmities were combated. He could hear a little, and was made to hear better; he could say a few words, and he was made to use language, read aloud, etc., if not like everybody, at least enough for his own use and the ordinary interchange of ideas. This did not interfere, but on the contrary tallied with his other progress; idiocy and mutism were dispelled together. But the desire of connecting and comparing the issue of these two cases must not make us substitute our own narrative for the graphic account given of the education of A. in Dr. H. B. Wilbur's last report (1866).

“A boy of eight years old came to the asylum in 1856, tall of his age and good-looking, but partially deaf. This deafness was increased by a disease of the perceptive ear. Thus the ordinary sounds of common life, full of meaning to the healthy ear, made a faint im-

pression upon his. And through some defect in the brain itself, or in the nerves communicating between the ear and the brain, he had not learned to interpret the sounds of the human voice into a living language. He spoke but a few words, and those he had learned by imitating the motions of the lips. He was thus practically cut off from learning orally. He had been at a common school, but without learning anything, and had suffered many annoyances from other children, on account of his infirmity, though of an exceedingly amiable disposition himself. The efforts of instruction were directed, not to communicating with him through the eye, substituting that channel of ideas for the obstructed one through the ear, but to removing the obstructions in the latter.

“This was done by submitting the organ of audition to a great variety of special gymnastics. He was exposed to the alternate influence of loud, distinct, and contrasting sounds; and his attention was called to the organ of the hearing in every possible way. Simultaneously with these exercises the effort was made to improve his speech by a vocal drill; the word-method of teaching reading was employed simultaneously. Taking advantage of the activity of his sight, caused by the former inactivity of his hearing, considerable pains were taken to teach him drawing and writing. In the former he became so proficient, manifesting not only great accuracy in copying, but considerable skill in design, that it determined in the selection of a trade for him. He left the asylum to learn the trade of a house and sign painter, after acquiring in it a simple elementary education. He was always amiable; but at the

last of his residence, in his intercourse with his teachers and the members of his own family, he manifested even delicacy of feeling. During his last two years in the Institution he became so capable in the work of the farm and garden, that he was trusted to do almost anything there was to do, without supervision. By a recent communication with his employer, it is learned that he shows great industry and aptitude in his new occupation, and that he is able to render valuable service."

The opposite results obtained in the cases of those young men, relatively to hearing and speaking, in the school for deaf mutes and in the institution for idiots, show with strong contrast the difference between the two methods of teaching such pupils: the pantomimic method, which cultivates only the sight, and allows even a partial hearing to die away in uselessness; and the physiological method, which develops an imperfect function, or substitutes the perception through the touch to that through the ear when it has become obliterated.

OBS. XLIII.—Blind Tom is another example of isolation of the mind (superficial idiocy), produced by the privation of a whole series of means of communication with the external world. For, though he is rather microcephalous, few of his symptoms point towards idiocy of centripetal origin.

He is the fourteenth child of a father who had eighteen children, all healthy and intelligent, except one of the last, and himself the idiotic genius. He is well built, his head is harmonious in its small, oblong, side-flattened shape. His fingers are remarkably thin, considering the

constant use he makes of them on his instrument. He is from birth nearly absolutely blind, not seeing enough to direct his walk. He appears first, in his unwritten legend, at the age of fifteen months, standing up by supporting his hands on the knees of his young master, and following with the movements of his body the modulations of the flute with which the lad was whiling away the blank hours of a Georgia plantation. Till five or six years old he could not speak, scarce walk, and gave no other sign of intelligence than this everlasting thirst for music. At four years already, if taken out from the corner where he lay dejected, and seated at the piano, he would play beautiful tunes; his little hands having already taken possession of the keys, and his wonderful ear of any combination of notes they had once heard.

People flocked for miles to hear him, till the Southern insurrection put a stop to his success. As soon as cannon ceased to be the orchestra, Tom was brought North and exhibited by his ex-master, whose kind and gentlemanly manners cannot keep off the remark that he likely makes more by Tom than Tom would by him.

He is led by the hand or sleeve before an audience, and begins by presenting himself in the third person, and in a few words thrown away, rather than spoken, saying, "Blind Tom will play this or that piece for you," etc., after which he begins the piano. His execution is sometimes sweet, oftener of an unknown force, which manifestly proceeds from powers higher up than his wrist. When he sends certain clangorous agonies his shoulder-blades bear as it were directly on the keys, his whole frame vibrates

with the instrument. Tom seems to savor the following applause :—

If some person of the company is invited to play a new tune that the sable artist will have to repeat, he being used to it, understands what is the matter, and shows his satisfaction by his countenance, a laughing, stooping, with various rubbings of the hand, alternating with an increase of the sideway swinging of his body, and some uncouth smiles. As soon as the new tune begins, Tom takes some ludicrous posture, expressive of listening, but soon lowering his body and raising on one leg, so that both are perfectly horizontal, and supported upon the other leg, representing the letter T, he moves upon that improvised axis like the pirouette dancer, but indefinitely. These long gyrations are interrupted by other spells of motionless listening, with or without change of posture, or persevered in and ornamented with spasmodic movements of the hands; this is his studying posture. When the stranger is through, Tom stops, seats himself at the piano, and reproduces the musical idea perfectly, if the piece was entirely new to him; but reproduces tune for tune, note for note, if he only heard it previously two or three times—and yet that child is idiotic for any other purpose; in the privacy of home as in public, he can accomplish nothing but gyrations and melodies; that he does to his heart's content.

Tom is evidently improving in his mind since he is thrown into companies. Now the question arises—If he can be elevated above his idiotic condition, will he, at the same time that he gains so many new perceptions, lose the acuteness of his musical sense; exchanging, if we may

so express our idea of a mental revolution, his artistic genius against an even general common sense? Mangiomet lost all his mathematical power, which was wonderful, and Kaspar Hauser his memory, which was vivid, in the process of gaining the ordinary acquirements developed in children at an earlier period. Is the loss of the special gift the rule when education equally embarrasses all the modes of activity? or does forcing in education require a more rigid conformity to physiological laws than was likely used in these two cases? A few more subjects, nicely treated and followed up, will settle that question, important to the whole race.

Obs. XLIV.—In the three preceding cases we have seen the result on the intellect proper of the privation of one series of perceptions, or isolation through the absence of one sense. In the following we are admitted to witness the effects on a normal intellect, and sound senses also, of artificial isolation produced by life-long confinement and sequestration, and of the cessation of isolation by sudden opening of social intercourse. Kaspar Hauser was the subject of that crime and the subsequent experiment. From his birth, in 1812, to his release, in 1828, he appears to have been shut up in a dark place with the floor for a seat, and food brought him always by the same silent figure. His body was stout and symmetrical; the soles of his feet without horny skin, and as soft as his useless hands, were covered by blood-blisters, witnesses to his first attempt at walking; he evidently had lived most of his time squatting, and for a long time after could not go up and down stairs without assistance. His

expression was "brutish," says his historian, his look "staring;" he could see better in the dark than by the sunlight, which soon caused some ill-described chronic inflammation of his eyes. To change his clothing, he was made insensible by a beverage that he hated, and recognised since as laudanum. But sociability is so imperative that the brute who kept him could not help breaking his isolation in two points; first by speaking two words that Kaspar understood, *man* and *ross*, and a dozen others that he could repeat without affixing to them any meaning; second, by leaving him the company of two wooden horses (*ross*), with which he partook his food and drink, thereby breaking in no inconsiderable manner the empty circle in which his life was shut up: beyond, all was silence, emptiness, and darkness. Thus brought up, his heart had, it is true, found something to love, but his mind was an absolute blank; his senses in relation to appetites exquisite, to intellectual perceptions not yet born; water was his delight, and bread his favorite food. He detected with horror any particle of infused alcoholic food or fermented liquor, or of animal victuals surreptitiously offered to him; and the smell of flowers or the approaches to a field of tobacco gave him the fever. On the other hand, he did not heed noises nor take notice of the tolling of bells for several days; but once audition awakened, he soon listened; and some weeks later, at the sound of music, he listened for the first time in the attitude of a statue; his ears and eyes seemed to follow the movements of the sounds as they receded; and after they had long ceased to be audible when he still continued

immovably fixed in a listening posture. At first, he was sitting on the floor by the side of his horses, ornamenting them with ribbons, strings, bits of colored paper, coins, bells, and spangles, driving them forward and backward without moving himself, offering them of his bread and water. As he never drank water without offering some to his horses, one of them, made of plaster, had his mouth very soon softened and altered. He felt very sorry for it, and, upon observation, ceased to water this horse. Another time he was quite inconsolable when somebody drove a nail into one of his horses. "Not a spark of religion, not the smallest particle of any *dogmatic* system was to be found in his soul," says his biographer. Nevertheless, though without dogmatic system, he became the adopted child of the city of Nuremberg, which supplied him with a teacher, Prof. Danmer, who took him home and began his education. The torpor of his intellect made soon room for a great activity; he learned everything taught him, transferred to living horses his love for wooden ones, and became the most elegant rider. "Screwed into the common form of school education," says Van Demerbach, "his mind suffered as it were its second imprisonment. As formerly the walls of his dungeon, so now the walls of the school-room excluded him from nature and from life." He made so rapid progress that a witness foretold that he would certainly "die of nervous fever or be soon visited with some attack of insanity or idiocy." Indeed, he soon lost his memory, became childish, melancholy, dejected, enfeebled with morbid elevation of nervous sensibility; Prof. Daumer's attempt was a failure.

The history of Kaspar, that we do not pretend to give here, teaches, among other lessons—

1. That idiocy is really isolation, as the Greeks had
2. It may be produced artificially.
3. Isolation is so unnatural to man that he will give life to inanimate things and associate his life to the sooner than submit to it.
4. It may be aggravated at will by dereliction, and aggravated by every day of non-treatment.
5. Isolation acts on the hemispheres as well as on the sensorial apparatus.
6. The awakening of the peripheral apparatus awakes the central one.
7. The awakening of backward functions require great care, lest the organs unused to activity lose their power and be exhausted.
8. What an idiot (born or made up by crime) must learn for several years, is what baby learned in his first months.
9. Physiological teaching alone can fill up the gap produced by idiocy proper, and years of isolation.

We now meet with the painful complication of idiocy with incipient or threatening insanity.

OBS. XLV.—V. was taken with convulsions when twelve months old; had them very severely for a week and milder for a year or so. A brother of his had similar attacks, which left no bad impression; V. was not happy. His look is strange and attractive, on account of a kind of set regularity in his features. He walks, but does not use his hands, but hardly ever does it; and can speak,

does not, unless at rare and unexpected intervals. He only begins sometimes to repeat syllables after his master, in individual, never in group-teaching. He does not answer questions, and scarcely says more than a word at a time unless overcome by some strong impression, when sentences will flow from his mouth in great abundance; so it happened that crossing the Hudson River, at Albany, he spoke fluently for several minutes, and shut his thin lips again for a long while. This singularity is no symptom of idiocy. In other respects, such as incapacity of willed movements, of attention, of perception, etc., V. is so manifestly idiotic that we cannot but rank him among those who have become such from some constitutional affections produced or developed during lactation or even sooner; without overlooking the symptoms which, like voluntary silence or muteness, and involuntary speech, point towards incipient insanity. As an idiot, his progress is small, but he is young, and it remains to be seen what a methodical training can do for his double affection.

The following observation shall present the same complication in its threatening stage, though apparently more amenable to education.

OBS. XLVI.—C., nine years old, as seen in his family, presented the following appearance at the end of 1864. Head without noticeable irregularity, body well formed as well as the limbs and extremities. No impediment in his movements; rather turbulent and restless. He does a few things, as cleaning the hearth when bidden; or driving nails into a board, without object but to amuse

himself. He talks unreflectively, and to all appearance unconsciously most of the time; cannot answer at all, but instead repeats mechanically the last word or syllable of the question he heard fugitively. His eyes seem quick catchers of things and persons, but as peradventure or unintentionally; all told, he has good muscular and sensorial organs, but little or no control over them, particularly over the latter. He knows several letters, and can imitate a little; remembers a great deal, and particularly keeps as soon as caught the correlation of names to faces. Otherwise, he is rather useless to himself and others.

A few months later C., at our suggestion, entered the asylum of Syracuse. Seen there after eight months of treatment, he appeared as follows: A good deal more fleshy, steadied in his manners, extremely obedient in the midst of an apparent absence of mind; eyes easily fixed, though more devoid than formerly of that lustre which bespeaks the look; his movements, and particularly those dependent on the use of the hand, have become very satisfactory; everything feasible by imitation in school and gymnasium is done handsomely; everything acquirable by memory alone retained. For instance, a kind but unmeaning servant had told him the names of all the Presidents, from Washington down, and he lets them come orderly and correctly from his lips as if he knew what he said, whereas, if asked what he likes best to do, his answer shall be, if he makes any, "To do." Besides, his wonderful memory for names extends to faces and to their relations. In a few days he knew by

name all the inmates of the Institution, about two hundred in number, and he might learn many more without giving evidence of any intellectual improvement.

Three facts dominate his training, and seem to counteract the remarkable progress otherwise secured by his training, so far. His face has not grown more intelligent; his talk is hardly more willed and rational; and his answers are yet not much more than echoes of the final of the question he catches. Little doubt may be entertained that his tendency is towards insanity; but his education is hardly begun, and a happy turn may take place.

OBS. XLVII.—*Superficial Idiocy—Almost Normal Cranium—No Complication.*—Emma N., aged six and a half years, of a well-balanced temperament, except the nervous disorders described below; she has neither disease nor infirmity. Her cranium is elongated, of good proportions, but anteriorly more narrow on the right than on the left side; a lateral depression above the orbital arch; vertical bulging from the root of the nose up to the frontal eminences, which are not marked. Facial configuration regular; harmonious features in a delicate and correct oval—thus no possible relation between the skull and face. The trunk and extremities are of perfect proportions. Emma is a beautiful child, with blue eyes and long blonde tresses; but the posture is bent, the head a little inclined to the left, the uniform extremities crossed and rubbing each other, the upper agitated, more especially the hands, the slender and flexible fingers of which are almost constantly interlaced in the most fantastic

manner. The organs of speech are well conformed, save a slight elevation of the palatine arch; but the tongue, constantly agitated, imitates with its point a corkscrew movement. The chest, the vertebral column, and the abdomen are sound.

Apart from some general prostration, Emma is constantly in action; even seated, her hands seek each other, are rubbed, the fingers are agitated, are crossed, the feet also crossed more involuntarily; the entire nervous system seems irritable, without our being able to assign a centre to it, either in the cerebrum, the medulla oblongata or the ganglionic masses. It might rather be supposable, from the physiological symptoms to be described, that there exists a peculiar disorder of the motor and sensitive nerves.

Emma weeps, sings, or cries often, without other motive than the excess of nervous sensibility which agitates her. Light, certain kinds in particular, electricity, and odors, visibly increase the manifestations of her nervous state. In this child the disorders of muscular irritability and of nervous sensibility appear almost parallel. Thus, the motor and sensitive apparatuses are well conformed externally; in this respect there is no inequality between the two sides of the body; but the sphincters rarely obey the will. The movements are quite extensive, but sudden; almost all involuntary, disordered, frequently spasmodic, and accompanied by contractions of the face, by cries, tears, and long-continued nervous laughter; they (the movements) are never mechanical. The light and uneven walk is rather awkward than swinging; station is

impossible; and the ascent and descent of stairs are only practicable by means of bannisters, slowly, and by placing both feet on each step. Emma neither runs nor jumps, and the extreme sensibility of her feet does not allow her to keep them long on the earth; she could better climb.

Her hands seize suddenly and badly, and let go with difficulty that which they hold; they can neither throw nor fling, nor receive a body, and are incapable of the most usual manœuvres, as dressing, lacing, tying, cutting, eating alone, etc.

Coincidentally with these incapacities of motor apparatuses, the tact is, upon all surfaces, and especially on the hands and feet, of an extreme sensibility; the appetite for dishes and drinks of high flavor well-marked, the search for penetrating odors assiduous, and the satisfaction of this desire is followed, when carried to excess, by aggravated irritability, then by atony, and lastly by a short, agitated sleep.

The hearing is delicate but inattentive, and seeks music; the look is uncertain and cannot be fixed; the pupil is small, and the limiting line of the blue iris is not distinct. The voice is strong, but speech is almost absent, and consists only of a dozen appellations, as *papa*, *dress*, *shoes*, and so confused that only the circumstances attending their emission can indicate their meaning.

The appetite is little developed, thirst very urgent, everything liquid and solid badly ingested. Mastication is nearly absent, constipation habitual, stools distant, at times involuntary, as before stated. Besides, the nasal

secretion is null; tears are, without apparent cause, frequent; the head has no peculiar odor. The pulse is very small and soft; respiration is good.

Emma is capable of no attention, unless at rare intervals, for that which concerns her dress; for she has the sense of toilet. She perceives but indistinctly by the senses, and almost nothing by speech. Incapable of rational comparison, of judgment, of reflection, of deduction, she is given up to all sorts of fancies provoked in her by circumstances of place and things which surround her; hence an apparent imagination, whose sallies and eccentricities at first attract, but in which we soon perceive that circumstances more than invention proper take effect. Limited to acquirements immediately necessary, or which flatter her vanity, she only notices a flower to smell it, to place it in her belt or her hat; and she has no knowledge of what color, form, letters, figures and quantities, etc., are. As to time, she only knows the return of Sunday, which always brings back her finest clothes; she is fond of music, but without marked excess, and her irritability has thereby increased.

Emma fears and knows no danger; she could not live a moment without an accident overtaking her. Far from being orderly and from seeking those mechanical symmetries, so many curious examples of which are furnished by profound idiocy, she is pleased by disorder, by amassing, by quaint combinations of objects, and at their destruction. Although she strikes, every instant, her nurse, her mother, and even myself, I notice that without being good, she is compassionate, and I am of opinion that her aggres-

siveness, her violence towards persons, are due alone to the foolish affection which has aggravated her condition. What confirms this opinion is that, understanding the right and wrong of certain actions, she has no comprehension of obedience, and is pleased at violent resistance: otherwise gay, grateful, affectionate, seeking for and returning caresses, full of vanity, coquette, credulous, and little imitative. Emma is spontaneous, but her spontaneities tend towards disordered acts, and her willing is all instinctive or negative. Besides, Emma seeks light and noise, the crowd, by the latter of which she wishes to be admired, but without communicating with anybody. She used to pass to and fro through the crowds in the drawing-rooms like a little queen not deigning to look upon her subjects and receive their homage.

I have known of no hereditary disease in the family; her father was robust and exceedingly intelligent; her mother, very nervous, a fashionable woman, capricious, quaint, charming, had had before her several strong and well-organized children; Emma, the last, had been carried *in utero* under painful circumstances; born in Paris, nursed in the family, no other cause for her condition was blamed except the great anxieties her mother had experienced about the sixth month of gestation. Her earlier years had passed without serious illness; she had maintained a marked degree of health, followed distantly by the physiological and psychological progress of which I have spoken.

Such was Emma, when I was requested to take the direction of her treatment. There was no one in the

family having leisure to devote sufficient time to her, and we were fortunate enough to find at once, in the person of an aged lady, a devoted nurse

It was evident that I had to deal with an agitated subject, and that her incapacities of functions and attitudes depended almost exclusively upon this nervous agitation.

Therefore, I did not think it desirable to insist, at first, upon a great fixedness of the look, a perfect standing or even sitting immobility, until a proper regimen had been followed for a time. No more coffee, no matter how weak; no more liquor or tonic wine; some water reddened with wine, white meats in small quantities, green vegetables, bread (Emma hardly ate any), no farinaceous substances. Two daily walks, avoiding isolation during the hot season, augmentation of solid, and gradual diminution of liquid food, and an abundant use of water externally; such was, save a few details, the course which preceded the various gymnastics. As to the exercises, I began by seated immobility, a little regular walking, and two sorts of mechanical contacts, both nearly carried to excess; I mean the swing which carries the feet against a spring-board, and the balancing-pole whose rapid passage from the hands of the gymnast to those of the pupil is, among other objects, calculated to blunt a sickly sensibility. The attention commanded by this sort of plaything, rendered rough and rapid at will, compelled Emma to pay some attention through the eye to the casualties incumbent upon the retention of it.

My attention had been early attracted by the excessive disorders of the look. I soon remarked that these were

twofold; one that might be called normal, the other resulting from circumstances. Ordinarily, the look was vague, slightly diverging upwards to the right side; but at other times it was so wandering, without fixed direction, that she then had no use of it, and only saw accidentally. Anxious about these variations, I made inquiries, and learned that my pupil had been immersed in floods of light, visitors and music, at late evening parties. By cutting off these causes of excitement, the eyes resumed their habitual appearance till their function could be improved. This was effected by the use of various gymnastics to which this sense was submitted. At first, and for the slightest contention and trial in looking straight at an object or at a distance, the eyes were watering profusely; it was melancholy and attractive to see rolling without anger nor sorrow, these liquid pearls which were no tears. At the same time that, in the course of our ocular exercises, this secretion diminished, that of the nasal mucus, absent before, made its appearance. Even if we cannot find the reason of such phenomena they ought to be recorded, if only at first to present them in opposition to the following observation. I have seen idiots having constantly a thick and abundant nasal mucus, who wept not for sorrow, anger, nor pain; the only child of this sort that came under my care had, finally, these two secretions restored to their normal state.

In Emma, the moment at which these secretions were inversely regularized was also that of her intellectual start. After the sight could be used methodically to discriminate the objects accepted as sensorial symbols of

ideas, colors, forms, letters, drawing, memory, exercise of prevision, were acquired to some extent in less than a year. During those twelve months her head was sensibly developed in bulk, but not harmonized; her face had a more placid expression, and her mouth in particular could be seen quiet for hours. Her form had become erect and well arched; her limbs and extremities were strengthened, the hand having lost its incessant vagary, and the foot having gained a solid stand on a smooth floor, not yet on the pavement; the whole dynamic being once renovated, the physiological and intellectual being seemed restored. Emma was, according to the current expression of the family, transfigured. Her activity, always above the average, was expended in a variety of exercises; her nervous system, regulated in its sensitive and motor moods, did not allow tears, cries, spasmodic or disordered movements; carefully isolated from electric and scented atmospheres, systematically exposed to cold during long trainings, she was henceforth capable of keeping herself quiet either in the standing or in the sitting posture; she could walk straight without any more hesitation in her gait; go up and down stairs without support; run some, and even jump, of which but lately she was so much afraid. Her superior limbs adapted themselves to all muscular exercises customary to ordinary children of her age, but they remained quite incapacitated for the little labors which demand, next to an attentive immobility of the whole body, an alert and sedulously repeated movement of the hand alone. She took great fancy to dressing herself, and particularly to

comb her fair tresses ; though incapable in so doing even to satisfy her own taste. Gracious and petulant in her movements, manners, and even broken language, which was a spontaneous compromise between her former mutism and the strict emission of syllables, material of her daily lessons ; using her eyes more directly ; shedding no more organic tears ; eating more food and less sweetmeats ; drinking less ; digesting better ; clean day and night ; and having turned her former distant moods into quite a coquettish style. Her comprehension had gained more than her attention ; her imagination was more impressive than her judgment appropriate ; spoiled child in the innocent and superficial sense of the word, she was entering into the condition of a young lady with all the unrestrained caprices of a young miss. She was possessed, thanks to her excellent lady teacher, of nearly all the simple and positive notions acquirable through the senses, and which are the primary elements of ideas ; but she had no sooner glanced at, than she penetrated them ; so that her thoughts issued rather at hap-hazard and without the substantial body given them by observation ; she had, evidently, besides the reflective faculty, that one called by Ch. Fourrier *la Papillonne*. Thus grown up, gay, laughing, petting and petted, vain, heedless, often whimsical, always capricious, too little obstinate to be called stubborn, and too light-headed to realize any good, she was pitied, and admired even, when spying the effect of her own graces either on the parasites or friends of the family, or upon herself in a glass. At this point, and being rich, she was deemed intelligent

enough since she could please; and her good teacher was dismissed, though she might have done much more for the charming girl.

OBS. XLVIII.—*Superficial Idiocy—Fine Head—No complication.*—Robert S., æt. five, sanguine temperament, robust, healthy, without accessory disease or infirmity; well-shaped cranium, face rosy, stout, inexpressive unless animated by anger; just proportion between the size of the cranium and that of the face, as well as between the body and limbs; good muscular development, large and convex thorax, spine stout, abdomen normal, organs of speech and generation harmonious; bodily habits natural, save a nervous constriction of the fist. His general activity is above the average, but soon exhausted, as appears by one, at least, daily prostration easily repaired by an irresistible and profound sleep. This great activity could not be applied to anything, even to dressing himself.

In this subject the motor apparatus is endowed with great activity. Voluntary, involuntary, coördinate, and spasmodic movements; all the modes of myotility, except the automatic and mechanical, are represented in this type of disordered and nearly indefatigable petulance. He has little swinging in his walk, goes up and down stairs as regularly as other children of his age, does not run or jump regularly yet. Though his articular flexions are easy, he executes very indifferently and unequally the acts of prehension, reception, sending, or letting go; but no difficulty will be met in teaching that. He does not dress nor eat alone, but his soup, with which he soils his garments. Indeed, his hands serve him yet but to hold a

stick or any other object he may use to strike anything or anybody coming across his way.

In this subject the nervous centres do not give evidence of any lesion; but his modes of perception are variously affected. He does not cry, laugh, sing, buzz involuntarily, as is more or less the case in profound idiocy; heat and electricity soon overpower him, otherwise his nerves might be said to be rather dull. His tact has no delicacy, his smell is dull—loving only strong scents, whether good or bad; the look is rigid, but eluding, and the auditory function is so null that he was thought to be deaf; and as he was not able to emit a syllable, his mutism was attributed to surdity. This was not only a family and nursery prejudice, but a diagnosis arrived at by several physicians, one of them advising me of the fact.

His appetite is good, digestion normal, save some costiveness unusual in children; he slobbers only when in a passion; perspires a good deal—mostly from the head. His sleep is long, deep, and imperious. He must sleep in the daytime, after a night's rest of ten or fourteen hours. Once he began this daily sleep in a carriage, and continued it without interruption, though a servant took him from the cushions to a chair in a room at a distance, his siesta looking like catalepsy. The pulse is full, the respiration large and easy.

As he does not listen, and looks but seldom, he may be said void of attention. When anything is wanted of him, they take him by the arm to the thing to be done, and he cannot offer much resistance, for all that is required from him is that he should take some pleasure, candy, or

repast, easy obedience against which the violent temper of Robert protests once in a while. Otherwise he does not care, concern himself, nor inquire for anything; surrounded with servants, he has not the time to form a wish; all his lifetime is consumed in long naps, eating, nibbling sweetmeats, striking the pieces of furniture, romping and shouting; he is kissed, combed, washed, walked with perfect indifference on his part, or if tired of it he escapes these attentions with a cry or a struggle. The memory that he seems to possess of persons does not serve him to desire and look for them; and that of things seems exclusively attached to the pleasure they afford. He is certainly idiotic, but without any of the symptoms which characterize an affection of the brain proper. In this respect the conclusion of my study of Robert was, that his case was misunderstood; and continuing to observe him, I soon acquired two certitudes, and conceived a doubt upon which rested my practice. The first certainty was that the disorders of myotility which looked so grave, were but exuberant expressions of a constitution mostly organized for action, and which called for the employment of the means calculated to reduce them to harmony and efficiency. There were no anormal movements, but exuberance easily restrainable into coördinate activity. The second certainty was that the nervous apparatuses, in particular those of vision and touch, offered incapacities rather than disorders; thus, he rarely looked, but when he did, it was not badly, etc. The object of my doubt was about the condition of the ear. Nothing seemed to me more suspicious than that would-be organic infirmity in

Robert. I had already met with some of those deaf who do not listen, and who could hear if they would or could be taught to listen ; Itard had known several such before me, and the Savage of the Aveyron was one of them, since, indifferent to the report of a fire-arm, he would turn his head quickly at the fall of a nut on the floor. And though analogies are not proofs, I had some other reasons to suspect the supposed organic origin of the incapacity of my pupil. Thus his external ear was perfectly built ; he seemed to have derived a knowledge of certain things by the use of hearing, since his imperfect touch and sight could not give any idea of them ; and besides I had a strong impression that, at the noise of the carriage entering the yard, he had made a movement indicating his perception of it. To make sure of it, I ordered his own carriage (a plaything of large dimensions), to be introduced in the parlor where he was, and I saw that without turning his head, he, informed by the rumbling on the floor, gave a half look in that direction to make sure that his ear had not deceived him. It was enough to be sure that with proper gymnastics I could conquer that incapacity, mistaken for an infirmity.

At the end of these observations I concluded that it would be proper to neglect at first the disorder of movement, contrarily to the usual course ; and to challenge the sensorial incapacities in an order inverse to their gravity ; accordingly, instead of losing several months in muscular exercises easy enough to come to at any time, I provoked the sensibility of the touch, of the smell, and of the look, and in two months I succeeded in giving voluntary per-

ceptions to the audition. Concurrently I exercised the organs of voice and articulation by extensive mimic ; the speech came forth, and with it the teaching of drawing letters ; counting began, everything followed the regulation of the senses like corollaries ; the bar had fallen which separated Robert from the outer world ; not only he heard, but listened ; not only he saw, but he looked ; his education had become feasible through these new means, and by the use of Physiological training he learned more in six months than ordinary children generally do in two years.

I do not mean to say that at this period he had become equal in every respect to the children of his age ; not yet. His training had taken him out of superficial idiocy, and made him capable of being educated by the ordinary processes, except in two points, the speech and the coördinate movements which require more special education.—*(Translation as above.)*

The following cases represent self-abuse preparing the way to idiocy or imbecility.

OBS. XLIX.—S., 10 years old, pale and slender, but well built, with thin but correct extremities, skin parchment-like, eyes dull and deep-set, lips thin and pale, cheeks stiff and adherent to the bone, head undersized, though well proportioned. He reads with pleasure, and would do it all the time, though he does not remember anything of it ; hence he does not improve. With little perception, no comprehension, he is cunning, tricky, aggressive ; if he does not do more mischief, it is owing to the perfect regulations and quiet company which surround him. The bad habits which arrested his

development began very early in life, earlier indeed than it is generally supposed possible; and on their doubtful continuance or aggravation shall depend his partial regeneration or absolute degradation.

OBS. L.—Sh., became a victim to the same habit later in life. He was at 12 a good pupil in a college, when he was taken very ill with, what is said, meningitis, after which he was found a prey to the monomania of self-destruction. From thence he forgot his Latin, etc., could not learn anything new, presented a dejected countenance, an emaciated face with stupid features, an undererratic look, and a hanging of the lower maxilla. Nevertheless, there is yet a good deal of the gentleman in his neatness, and of the scholar in his incessant reading and writing to no purpose nor benefit; he has made himself the mere shell of a young man.

OBS. LI.—*Imbecility—Chronic Cause.*—Louis B., aged 14 years, very tall and thin of his age, of a lymphatic temperament, without accessory infirmities; his cranium was quite well conformed, excepting the forehead, the prominence of which is, as it were, isolated from the rest of the skull by a depression in the course of the coronal suture; the deflection is the more distinct since the frontal eminences are very apparent.

No other defect characterizes the cranium, which has not grown since the age of ten. The mouth is seemingly dead and closed without firmness; the alæ nasi, as well as the pale cheeks, are relaxed; the eye dim, half-shut, and the pupil dilated and irregular. His face has somewhat elongated in the last four years, but it has pre-

served the delicate, timid, and sympathetic characters of infancy in the midst of the hardy and bony types that were growing up about him in college. In other respects well formed, the habit of his body is relaxation; the organs of speech are perfect; those of generation are voluminous and wilted.

Louis would remain in bed or upon a seat until forced to leave, which he would do slowly, grumblingly, and only to seat himself again upon the nearest chair. "*Walk? What for? Go where?*" would he say in his happy moments; for usually not one syllable could be gotten out of him. Thus he did nothing, and his activity was abolished. In the same way nervous sensibility had disappeared from all surfaces; no irritation short of absolute pain roused him, and the encephalic nerve-masses appeared profoundly affected with atony, at least. No difference was to be found in the extent and precision of the functions of the two sides of the body. The sphincters are lax, but not powerless; the muscles are relaxed; the soft blanched skin is without perfect capillary circulation, and although all movements of his age are possible to him, yet he will perform none of them; it takes him more than an hour to dress, and he eats dirtily. The sensibility of the palm of the hand and of the fingers is alone preserved; the smell is indifferent; the taste changed to disgust; the hearing delicate, although voluntary attention is nearly always suspended; the look is dull, with no abnormal starts or intellectual gleam.

With the hand, and more markedly the organs of generation are the seat of a sensibility and irritability

kept up or excited by the solitary vice. Speech is somewhat slow, yet distinct; besides, Louis never speaks spontaneously, and when he resolves to answer, there occurs an interval between the question and the answer, during which he makes visible efforts to break silence. It is always necessary to force him to eat, and he takes but little. His evacuations are voluntary; generally he is constipated, but at times he suffers from diarrhœa lasting several days; he does not slobber, never weeps, rarely blows his nose; his perspiration is never noticeable, and his sebaceous secretion has no special odor.

The attention of Louis is, so to speak, asleep, and it requires some perseverance to rouse it. Voluntarily he compares, judges, appreciates nothing, and seems to dread all mental operations. To all questions, when he has decided to answer, he replies: "*Why do you ask me that?*" And when the answer follows too clearly from the question, he adds: "*You know very well that I know it.*" But he almost always avoids answering, and never speaks of himself. Besides, Louis does not know what colors, shapes, calculation, time, space, and money are; but he can still read, and yet will not. He has no abnormal taste for music, he likes to hide and not to destroy, and appears to have foresight. His memory presents this peculiarity, that he can no longer retain new thoughts or ideas, that he has even forgotten those of locality and of most persons, especially such as are connected with his intellectual studies; but if he does not know anything of that which he has learned by induction or by deduction, he retains all that he has learned by heart, word for word.

Thus after being teased by questions which he will not answer, he will at last, to escape them, say with an expression of childish satisfaction: "*Sir, shall I recite to you a fable of Phœdrus?*"

"*Formica et Musca contendebant acriter
Quæ pluris esset. Musca sic cœpit prior:
Conferre nostris tu potes te laudibus? . . .*"

He will not stop his recitation unless interrupted; but then he is silent; capable of repeating, yet incapable of saying anything of himself alone.

Louis has no instincts; neither cruel nor rebellious, he disobeys because powerless to obey, from asthenia; in him the spontaneity is broken. Thus he has neither moral qualities nor defects, excepting the insensibility resulting from his vice, and the dissimulation necessary to hide it; for he very well knows that it is wrong; but all his spontaneity is sunk in that one act towards which all his thoughts centre; consequently he likes to be alone; logical desire for solitude, which must not be confounded with the instinctive isolation of the idiot or the maniac.

The parents of Louis are well organized; he has two married sisters, whose children are intelligent; he himself had a happy childhood, and no other cause is known of Louis's present condition than that which cannot be doubted. At eight years he was a charming boy; at ten he had begun his Latin studies with his father, and had been placed in the sixth class at college. What happened there? . . . There is among collected students a kind of freemasonry, the object of which is known, without the

details being appreciated ; its victims are buried, but are not counted, nor are they counted who leave school worn out in body and mind, nor they who fall into imbecility, nor they who ere long will be dement.

Louis, the gay and thoughtless child, did not resist the fatal maelstrom. He worked hard, obtained prizes the first year, but by that time he had become sadder, loving solitude, avoiding light. It was to work, he said, that he isolated himself during his first vacations—and, truly, he did work—but did he only work? The succeeding year he had still another honor; he returned still more gloomy than before; he experienced, he said, laminating pains, which seemed to pass horizontally across the occipital base of the skull; that did not prevent his working alone, far from noise, in the dim daylight. This time the vigilance of his parents being aroused, they saw that they could no longer have doubts as to the cause of the changes in the health and tastes of their child. He was watched, which annoyed him a great deal; “*it prevented his working,*” he said. When the academic year began, as it was not thought that Louis was more in need of care than of Latin, he was sent back to his place in college, but no longer the first in his class. Severely punished by his teacher for negligence, unpardonable in a first-class pupil, he was often shut up during recreation hours and exhausted with pensums; he passed some days in the sick-room without a distinct cause; his skin was dry, his pulse irregular, and he only returned to recitations to exhibit a dull intelligence. At the Easter vacation his family was requested to keep him. He had been out of college

eighteen months when I saw him for the first time, just as I have described him. I did not believe that in the present case, educational means, properly so called, would be efficacious. He was ordered to take very warm baths, with cold affusions on the head; to drink every morning a wine-glass of tonic wine, and to eat a piece of bread; then he was led, or rather dragged, out to take a walk of some two hours. When he returned, his arms and legs alone were rubbed and shampooed. When I perceived that this exercise was too little for his acquired strength, I ordered him besides, to saw some wood, to carry stones, to plane boards, and when he answered, "*Why is this? . . . I will not, . . .*" he was told, "*Do it; obey,*" etc. After a period of resistance, which daily became less, he would yield and obey.

Imperfectly watched hitherto (it was never strictly enough done to suit me), I advised certain precautions, a detailed account of which would be tedious, and among which I shall only mention a bed which I caused to be made so that it gave warning of the least motion on the part of the child. He was much annoyed by this new kind of couch. In order to complain of it, he recovered the spontaneous use of speech which he had lost for nearly two years; he said that the noise made by his head-board prevented his sleeping, etc. No attention was paid to this, but I repeat it I doubt whether he was as carefully, watched during the day as I would have wished. However his face and limbs became plumper, at times his eye would brighten, and even his mouth laughed occasionally; when alone he often laughed and smiled as if at a thought. Such moments were

taken advantage of to make him speak, and at the end of eight months he was beginning to say certain sensible things quite willingly; his appetite returned through the exercise, of which however he always complained as excessive; general sensibility returned by means of the bath, the temperature of which was gradually reduced to coolness, and by means of the frictions and shampooing, which were gradually extended as far as the bust, but always carefully avoiding the glands of the neck, breast, and groins.

At length, the birthday of his mother being near, I prevailed upon him to learn a compliment; by dint of copying them, he retained the first two sentences. But that to which I attached the most importance, was to make him speak, speak in order to deduce from that which I told him a series of ideas with which he should answer me: one would hardly believe how very difficult these exercises were to regulate properly, how fatiguing to direct and keep up. Concurrently with this, I showed him colors, forms, drawings; he knew all that! "*And why did you not speak of it?*" I asked him one day. Louis.—"Because I did not know it any more." Seguin.—"You knew it, since you still know it." Louis.—"That is true, but I did not have the strength to speak; and besides, I was thinking about something else." Seguin.—"What then were you thinking of?" Louis did not answer; I did not insist, and we continued our exercises. These were interrupted by a voyage, the effects of which I doubt not were beneficial, if my directions were followed.—(*Translation as above.*)

OBS. LII. *Backward Child.*—In the fall of 1842,

Paul de V. was brought to me. He was five years and a half old, of a nervo-lymphatic temperament, and in the enjoyment of fair health.

Cranium a little wide in the bitemporal diameter; forehead of a somewhat depressed type, without either symmetry or notable irregularities. In its relations to the cranium, the facies resembles that of an old man, and this analogy is made still more striking by the external drooping of the lips, which follow the sinuosities of a very irregular dental arch. The habit of the head is slightly inclined, that of the trunk relaxed, that of the extremities bent, that of the hands rather firmly contracted, especially during sleep. This child remains extended upon an inclined chair the better part of the day; during the rest of the time he is active. The organs of voice are very defective; tongue thick, dry, seemingly transversely fissured; teeth growing irregularly, even under the tongue, and of a less number than he ought to have at his age; palatine arch flat and low and partaking of the dryness of the tongue; hair scanty and deficient in patches; skin dry and covered with a minute desquamation; the organs of generation, the thorax, and the vertebral column are normal; the abdomen is rather large and hard.

Paul's general activity is at times sufficient, but it is quickly exhausted, and requires to be renewed by frequent rest; and he only makes use of it for games insignificant even at his age. The nervous system is very excitable as a whole, but not at any special points; and odors, heat, storms, augment this excitability, which manifests itself by noisy, excessive gaiety, which is quickly

followed by tears, and then by repose. Nothing, however, would seem to indicate organic lesions in any apparatus. The nervous centres and the nerves of sensation, and even those of motion, do not appear affected, although certain movements are notably disordered; there rather is, as I subsequently became assured, a want of voluntary coördination, than any idiopathic pathological state: thus motor and sensitive functions are equally well performed on both sides of the body; the muscles, though little apparent beneath a thick areolar tissue, perform their functions regularly, as do also the sphincters; there are no mechanical or spasmodic movements; there can only be noticed a rather high degree of general agitation. Paul will remain willingly motionless, provided it be in a chair; he walks well and for a sufficiently long time, but rather uncertainly; with the aid of a support, he, with difficulty, ascends or descends; he runs but little, and jumps badly; he can properly seize an object with his hand, but this organ hesitates to let it go, and could not throw it any distance; he does not attempt to dress himself, and the only thing he eats by himself, soup, he wastes right and left.

Paul's tact is rather dull; his smell delicate and fond of such odors as enervate him; his taste is little developed and indifferent; his hearing acute; his look vague and a little raised. In him, I am told, sensibility is null; voice harsh and hoarse; speech without distinct articulation; appetite fair; mastication incomplete; digestion long; stools pretty good; urine scanty, red, and sedimentary, but passed voluntarily; saliva normal; sweat limited to the hands, feet, and to the *alæ nasi*, is habitual,

but only the greatest heat can make it appear on the forehead. His sleep is nightly disturbed by spasmodic movements, sitting up at times on his bed while still asleep; his pulse is small, hard, and rapid; his respiration almost always oppressed.

Paul is more attentive to words than to things; he likes to listen to persons talking, although he only perceives the sounds, or at most a few simple words addressed to him. He only compares and chooses among objects which are necessary to him; in all things else his faculties do not seem to exist. Thus he has only a few common perceptions; no positive notions nor ideas; the only knowledge he has of time are the hours for breakfast, for the walk, or for dinner, hours which he never forgets. He likes music, yet never sings involuntarily and never hums. He has the memory of the location of objects placed by himself or others, that of persons and names, though he cannot pronounce them. He can neither read nor write, etc.; does not seem to lack prevision.

Paul possesses the instinct of personal preservation, that of the preservation and arrangement of objects, but the latter instinct wants the minutia proper to the mass of idiots; he is neither aggressive nor cruel, nor is he given to abnormal appetites; not very obedient, but without stubborn resistance; he is affectionate and caressing, grateful, gay, without vanity, heedless, trustful and much of an imitator. Besides, he has the sentiment of right and wrong in so far as it may relate to what he does; he does not lack an active will, but what he does want is an object of intellectual activity—object to which common

education could not lead him; and he has no more of instinctive and negative will than other children of his age.

Far from being an idiot, although he really appears as incapable as many idiots, Paul de V. sometimes seeks such objects and persons as may amuse him, and that without preference, without monomaniacal exclusion for or against any of them.

I have been unable to obtain any details concerning the ancestors of this child, originally from Burgundy; the father is an accomplished gentleman; the mother is an intelligent and careful housewife, who has had, and still suffers from a supposed cancerous tumor of the right breast; nothing plausible can be learned of the causes of Paul's condition. When placed in charge of this child he suffered from no noteworthy disease or infirmity except the cutaneous affection which has been mentioned; his condition had not at all improved from the age of three years, at which time he began to walk, and it was the stationary state which induced his parents to consult me.

There could be no doubt that the physiological disorders were of secondary importance; the intellectual and moral state alone was serious, not alarming; no abnormal instinct revealed the nervous disorders characteristic of idiocy; I had simply to deal with a backward child.

I began by inducing the family physician to prescribe a more nutritious diet (the child having previously been kept on milk diet), chalybeates, old and pure wine in the morning, tepid baths of short duration, taken at

bedtime ; walks regularly taken morning and evening ; for the rest the hygiene was suitable. I first rendered movements, such as the walk and manual acts, more precise, then the functions of the eye ; I awaked, by partial and varied immersions of the hand, the rather dull tact ; I gave a taste for pictures by choosing them according to the child's wishes. It was at first more difficult to draw his attention to colors ; however, some brilliant vests and cravats helped him much to distinguish the primary ones. He was very fond of scrawling with a pen, which he carried from the paper to his shirt-collar ; starting from this, I began to drill him in regular tracings, and soon after made him draw, upon the black-board, profiles which he recognized ; thus he learned his letters, drawing them after me ; but he did not yet speak, although he had the desire and tried to.

But excepting *ma* and *pa*, all articulated speech was impossible to him, and besides he was almost voiceless. I undertook simultaneously, though by very different exercises, to develop the voice and the articulation. The former of these functions was solicited and sustained by slow and prolonged sounds from the piano ; in this exercise, the mistress, after having found the key to his voice, repeated this note with the corresponding instrumental sound and with her own voice, rising or descending a note or two from time to time, to vary the monotony of the chant, and by degrees drawing out the child's voice in unison with, and following the sounds. In the second exercise, which does not differ from that exposed in the method, the child found in imitation the resources which

had been denied him by his organization to execute articulatory movements.

But when he began to speak outside of the exercises, stammering reappeared. Happily this vice was not allowed to take root, and I eradicated it nearly at its birth; which plan is much preferable, notwithstanding what has been said, to that of waiting for the period of puberty to get rid of this evil habit. Simultaneously with these vocal exercises, which lasted nearly one year, Paul was learning to read, write, and cipher; his functions were becoming regular; his acquired tastes led him to intelligent occupations, and induced him to take part in games which required some little attention and patience; he liked to skim over picture-books, and he explained the subjects in his own way, that is to say, he named the objects and figures, but without uniting them in his mind, and without realizing the relations that the artist had established between them. It required two years for him to appreciate these relations, to establish them between himself and his doll, and between it and his punchinello; but he already (seven and a half years old) spoke, if not correctly, at least intelligibly; he drew with precision and taste all plain figures that were traced on the board before him; he wrote by copying written words, and by rendering into letters words pronounced for him By this procedure, in spite of the objection which I have myself pointed out, how many operations of attention, of comparison, of judgment, of invention even, has he not made, whereas the mere copying of a written model would hardly have trained his eye

and his hand. For the great majority of children in this manner copy pages, volumes, without thinking or perceiving aught.

To return to Paul: he only required my assiduous care during three years. From the age of eight he has commenced to learn such things as are taught to all children, even such as I did not wish him to acquire so soon. From that time I only saw him at long intervals; the parents were not always strict enough, but the governess stood by him holding Latin and punishment in perspective, ready to discharge all the knowledge she had upon him. Paul has bravely endured all, and this year (1845) has entered college. —(*Translation as above.*)

As circumstances did not permit us to study the English institutions for idiotic children, we rely upon the two following observations, taken from the No. CCXLIX. of the *Edinburgh Review*, for July, 1865, and written apparently by a person actually engaged in the treatment at Earlswood, and equally competent to describe the training and to form judgments on the subject:

OBS. LIII.—“Four years ago a boy came under the care of the establishment belonging to this asylum, then at Essex Hall. He was of well-proportioned frame, but with a singularly formed head, and wild, sullen, and with scarcely any speech. He was, in fact, the pupil who was six months learning the difference between a dog’s head and his tail. If spoken to, he uttered by no means pleasant sounds; and when corrected would run away, and hide himself, if possible. It is not necessary to give in detail the history of his progress, but his accomplishments at this time are

such as to enable him to earn his own living, and even more, in the establishment; while his smile is most agreeable, and his manners very attractive—refined, indeed. Yet even now his speech is scarcely intelligible to those who know him well, and he has not a quality of any kind which could enable him, without guidance, to manage even small sums of money or the simplest economy of daily life. Yet he is a carpenter and cabinet-maker, the workman to whose skill is due a great deal of the neat furniture of the house; and he can paint, glaze, and varnish in excellent style. Many of the doors are made and finished by him. He runs with the rapidity of an American Indian, fences so as to compete with a good master, and plays the drum in the band. More than this, he has made a model of a man-of-war, which has been several times exhibited in London, and accomplished his first attempt at this achievement merely by seeing a drawing of one on a figured handkerchief. He was told that the instant it was launched it would fall upon its side for want of ballast and due calculation, but would not believe it till he witnessed the disaster, to his utter dismay.

“ Another effort was made, and the finish, proportion, and general plan were now perfect. He was furnished with metal guns by the generosity of one of the members of the board, and to hear him explain his ingenious methods of proceeding, as he stood before his model, is perfectly unlike anything else ever seen or heard, while his meaning must be more than half guessed, from his want of words and expression. He is now making a model of the *Great Eastern* iron ship thirteen feet long. He has made all the working

drawings, and will accomplish the feat admirably. From morning to night he is constantly employed, and when his regular work in the carpenter's shop ceases for the use of the house, he spends his time in these sorts of fancy works, including a gigantic flying-kite, and in copying fine engravings. These drawings, in dark and colored chalk, are most meritorious; and many of them, framed and glazed by himself, adorn the corridor and other parts of the asylum. One was graciously approved and accepted by the Queen, who was kindly pleased to send the artist a present; and Mr. Sidney had the honor of showing some of them to the Prince Consort, no common judge of art, who expressed the greatest surprise that one so gifted was still to be kept in the category of idiots, or ever had been one. His Royal Highness was particularly astonished, not only by his copies of first-rate engravings, but by an imaginary drawing made by him of the Siege of Sebastopol, partly from the Illustrated London News, and partly from his own ideas. He dislikes writing, and holds it very cheap, and like the ancient inhabitants of certain portions of the American continent, would make his communications pictorial. If offended and intending to complain, he draws the incident, and makes his view of things about the house and his requests known in the same way. He has made a drawing of the future launch of the great ship, himself the principal figure, and all the inmates of the house cheering him and waving their caps. In short, he has seemingly just missed, by defect of some faculties, and the want of equilibrium in those he possesses, being a distinguished genius. He is passionate in temper, but relents and punishes himself. He set a trap for Dr.

Down when he offended him, but was very sorry for it. He kicked a panel out of a door in a rage, and afterwards refused to go to Brighton, on an excursion of pleasure; because he did not deserve it for his misconduct. He is conscientious, gentle, and generally well behaved, and is now considered on the staff, dines with the attendants, and in some way he fancies the establishment could scarcely go on without him. He has a brother afflicted with the same malady as himself in the asylum, to whom his attentions are constant and affectionate.

“To explain the physical and physiological mysteries of such human beings is beyond the present power of any known science, and must puzzle the most ingenious speculator on the frontal, temporal, parietal, and occipital divisions of the human skull, as indicating idiocy or normal powers. There is no knowing what an idiot can do, till tried; and such who can be taught nothing in one way, may learn much in another. The youth just described, with all his cleverness, could never be made to understand that an annual sum paid quarterly would equal in amount the same paid weekly. Yet another child, stupid at all other things, will make arithmetical calculations mentally, of great extent, with perfect accuracy and marvellous readiness.”

Without phrenology, philosophy, or explanation of any sort, what better proof that idiots are exactly like all of us, incomplete beings, only more infirm?

Among the cooks there is one noticed by Mr. Sidney as the strangest specimen of unequal powers that could be found.

Obs. LIV.—A., real simpleton, utterly without judgment; he has a memory which is prodigious, and a singular tendency to make puns. When spoken to about his kitchen duties, he said, “though I am a *cook*, I hope I shall never be a *sauce-box*.” Being wonderfully versed in history, he was requested to describe the Rye-House Plot when busy helping to make a pudding, but he excused himself by remarking drolly: “I am so busy with the *meat-tub plot*, just now, that I have no time to tell you about the *Rye-House Plot*.” If desired to give an account of almost any prominent event in ancient or modern story, he will repeat whole pages of what he has read, and there is no stopping him. When giving the history of Talleyrand in no complimentary terms, he was interrupted by a high dignitary of the Church, so he said sharply, “He was one of the clergy, any how,” and went off to his cookery quite affronted. Besides his work in the kitchen, he is a good shoemaker, but in all other things a palpable imbecile. How impossible is it in the present state of our knowledge, to account for such a human being, with a memory of incredible power, with a capability of exercising a certain handicraft, and yet without any faculty that could guide him in the commonest path of daily life. This pupil was called by Mr. Sidney the “historical cook;” and he is also alluded to by Mr. Brady, who says of him: “He can repeat whole pages of history. We asked him several questions, nearly all of which he answered with marvellous accuracy. Among his replies he gave us an account of the Peloponnesian War, showing that he was intimately acquainted with its details. He mentioned

its duration, date, and cause; the resources of the combatants; the gains and losses on either side; the temporary peace; the renewal of the war after the Spartan success; and the final defeat of the Athenians by Lysander."

No need to say a word more about the subject; such a cook can take care of himself. Therefore, without referring more particularly to him, we would only remark that if we appear to have forgotten the simpleton, it is because we consider him as an artificial and after-product of idiocy; resulting from the outgrowth of a few wild capacities in the absence of systematic training. Thus idiots and imbeciles are known to have taken their own case in their own hands, and to have become, despite the imbecility of those who laughed at them, one-sidedly useful, cunning, even talented. In fact, among them are found some of the daring Triboulets who dared to tell the truth to kings.

Dr. Kerlin, in the "Mind Unveiled," furnishes us with the following case:

OBS. LV.—"Beckie, in infancy her health was considered good, except during dentition, when she had repeated nervous twitchings. She was backward in commencing to walk, but when she had once learned, was quite active. In some respects her habits were nice. She was particularly careful of her shoes, but would clean them, when soiled, with a new dress or apron. Her tastes for certain colors or styles of dress were odd. In disposition she was unsociable; preferring solitude to society. She preferred even to play by herself, and her amusements were as eccentric as they were original. Her

attachments, though few, were quite decided. She was timid in the presence of strangers. She disliked domestic animals, and was often destructive towards them. She tried to utter several syllabic words, at the time that children ordinarily talk, and never but one at a time. This she soon discontinued entirely.

“We shall describe Beckie as she came under our notice eighteen months ago.

“She was in a grove, alone; and carried in her little clenched fingers a quantity of sticks and stones, and a small tin cup; her form was crouched, and she moved about among the leaves, apparently in search of something; but on our approach she bounded away with the grace and lightness of a startled gazelle. We followed her, and after much coaxing and many manœuvres, succeeded in getting her to approach. She seemed very slender and nervous, and her face pallid; the clear, transparent skin revealing the delicate veins that coursed beneath; her eye possessed a peculiar pensiveness—indeed sadness—which corresponded well with the lost outlines of her interesting face; once seen, she was long remembered; for she seemed, with her dream-like silence in that green retreat, more like a spiritual than a physical existence.

“On further acquaintance, we found her to be of a violent temper, and easily excited to a manifestation of it by any interruption to her designs or habits. During such paroxysms she frequently threw herself on the floor, stamping her feet with rage, and turning blue in the face; at other times she would bite and slap herself, and once pinched her finger severely in the crack of a door, to

excite a relenting spirit in the person offended with her.

“She had been severely reprimanded by her teacher, and after the first storm was over, approached the latter with all the signs of deep contrition and repentance—reconciliation, under similar circumstances, was always effected by a kiss; on this occasion, the preliminaries were not valid, for in the very act of kissing, the child bit the lady’s cheek so severely, that the marks lasted several days.

“Her mischief knew no bounds; where no form could glide, Beck, winged with the spirit of mischief, might be found; a slight tip under the elbow of a stranger at tea, has dashed the cup from his lips, and its contents upon his satin and linen. An annual clearing of the flues has restored rulers, scissors, collars, and all the *et ceteras* of the school-room, mostly deposited there by Beckie.

“Recently, this innate mischievous propensity has exhausted itself in another form. ‘James’ is selected as the victim, and a more appropriate could not be—a huge slate-rag, pendant to his coat-tail, is one of her favorite exhibitions.

“Her attachment was always confined to but one individual at the same time, and the bond was irksome enough to the consenting party, for her affection was too tyrannical in its demands to be comfortably supported, while she was disobedient as she could well be. The few child-like amusements she had seemed distortions of simple, easy childhood; her arms were often loaded with two or three geometric blocks, a long ruler, or a yard-stick—these were her babies; they were with her in the woods, on the la d

ders, in the school-room, and at the table in respective seats; they were taken to bed, where they lay on each side of her, and her soundest sleep would be awakened if any one had the temerity to attempt their removal.

“No improvement was apparent in her case, until she was fully impressed with a course of tonic medicine, to soothe and settle her excited nervous system, while it was necessary to rectify her perverted moral tendencies. To this end her solitude was interfered with; she must join in the dumb-bells exercise with other children; a *rag-baby* must be substituted for her blocks and stick; she must be taught that first lesson in progress, which she has not yet learned, obedience; she must not be over-petted, and yet not forsaken; she must seek for association with each and all. This plan was only partially carried out; yet her health improved; she became less exacting in her demands on her favorite instructor; and she sometimes made lip motions when asked to talk. We extract from our register:

“December 3d.—The seal which has been set for a long time on articulate speech is broken; and to the surprise and joy of the household she is now a *talking* child. ‘I did it—mamma—papa—baby—apple—you,’ are the words to which she has given utterance; thus answering our anticipations, and giving assurance that it is but the beginning of greater things. *She* is too much excited.

“Beckie, after preparing for bed, in taking a glass of water, mischievously poured some on the floor; this was a habit of hers to excite a mock scolding which she enjoyed. She was immediately called to, in a stern, loud voice: ‘Who did that?’ The little thing danced

about in high glee and suddenly exclaimed: 'I did it.' Excitement was now heaped on, and the frenzied child repeated the additional words—indistinctly, it is true, but they were *words*. Mark what follows in *five* short days.

"December 17.—Since 8th instant, has been quite sick with irritative fever.

"A few days of protracted excitement and the child had lapsed into her helpless silence; no enthusiasm can awaken that little heart to speech; her face was pallid; her breath fetid, she was 'out of tune,' after striking but a few notes, for a rude hand had swept over strings too tensely drawn. A slow fever prostrated her; and for many days after she lay on her couch, gentle and quiet, not sick—not well; but her animal forces completely exhausted. About this time, two circumstances occurred which had a very happy bearing on Beckie's future. Dr. Garrish wisely forbade any inmate to fret the child for *words*, under the conviction that language would come naturally, when she was physically and mentally prepared for it.

"Beckie, too, had an attendant, and between them a reciprocal affection sprang up. The latter possessed the rare quality of persons in this station, of not desiring, and concerting, to monopolize the attachment of her little charge. She compelled her to look to many sources for her entertainment, and never became herself the victim of the child's tyrannical habits. Under such favorable auspices, she improved; she was no longer restless and inattentive in the school-room; a new intelligence seemed to dawn from those pensive eyes, and when our phonetic

exercises were engaged in, she indicated her willingness to join them by twisting her mouth in all possible directions, and modelling her lips with her fingers.

“One day, about this period, she *accidentally* spoke two words. In a crowded dining-room she was interfered with, and called out in a half-audible voice, ‘Go away!’ But immediately she ran into a corner, hid her face, and held her lips fast together with her hand, as if showing an instinctive dread of the excitement which the forcing plan had engendered. It was a natural sign that true wisdom could not disregard in the management of such cases.

“We return to our register. January 24.—For five evenings past, Beckie has indulged in a free use of her organs of speech; this is only after retiring, and when under the impression of being alone. What is most gratifying, is to find that her intellectual powers are not so dormant as was supposed by some. Her words are the *representations of intelligent thought*. Her language is addressed to her doll; its nose, eyes, etc., are pointed at and named with some lispings. . . . She *sings*, with some errors, ‘The Lakes,’ (a school-room exercise); her pronunciation of these is poor, but sufficiently distinct to be understood by any one familiar with our singing exercises. She makes attempts to recite our addition-tables, and pronounces perfectly many of the figures. ‘Baby! Dannie had a fit! Poor Dannie!’ are words frequently uttered, with immoderate glee at the circumstance. She sings with a clear, mellow voice many of our school-room songs, and with a precision of note that astonishes us.

Her favorites are the 'Geography Tune,' 'Old Dog Tray,' 'I think when I read that sweet story of old,' 'My own Mamma, my dear Mamma,' and 'Sweet Lillie.' Her want of coördination in the movements of the tongue, lips, and laryngeal muscles, prevents clear articulation; as confidence, and her own powers by exercise are developed, she will be much improved by phonetics, which school-room exercise she is evidently fond of, indulging, as she now does, in the vocalization of many sounds for the benefit of her mute rag-baby.

"The intelligence of a darling child having been thus wonderfully restored to speech, must have thrilled the heart of fond parents and numerous friends; and a few months after, an aged grandmother from her distant home visited the child, to catch from her own lips the liberated music. Beckie was happy; she recognized her venerable relative, submitted to her tender caresses, *but would not talk*. Only that morning had her cheerful voice been heard by all the house—now, she was mute again. The grandmother turned to leave, sorrowing that she could not hear, with her own ears, those cheerful sounds. When only a short distance down the avenue, Beck, in the most provoking manner, ran up to one of us, and said, in a whisper, 'Grand-mom gone home—see baby.' Much of the 'old leaven' remained in her composition.

.. "September 23d.—Has returned from a protracted visit, home. Parts with her father with regret, and seeks those now whom she never sought before, to point where 'Papa' has disappeared; when asked what she means, with a face

full of sorrow she says: "Gone home to baby William." Juliet, her good nurse, is gone also; and a hearty cry indicates the genuineness of her childish sorrow, and draws her still closer to us, as her present grief is a *natural* one—the first she ever exhibited. Her habitual gayety is soon restored, and she goes through our halls, making them echo with her cheerful songs. She seldom *talks* aloud; she whispers very loudly, so as to be heard across a room; but her singing is an annoyance and disturbance during school hours. She has much to say about her little baby being very sick, because a naughty girl whipped it. On one occasion she met one of us at the door, and with the most earnest expression of concern, she said in a hurried voice, 'Doctor, do come up and see baby—he's got the fever!' She was asked what she had done for it. Her answer was derived from her own ample experience—'Give it a mustard foot-bath.'

"Her disposition is much improved; her barrier to speech would seem to have been an irritation to her, which being now removed, allows her little heart to leap with childish exuberance. Her light step is lighter now; her pensive eye is singularly bright, and dances with the strong mental working, to which she gives free expression. To reproof, she is more gentle and obedient, answering with a quiet smile; when before, she gave a pitiful contortion of countenance.

"What is our little prodigy doing now? Four months ago she was placed at her alphabet, having previously been well practised in form and color; she is now reading monosyllabic words, pronouncing them aloud and correctly.

Before visitors, she speaks in whispering tones, generally; if a baby is in the company she will talk in ordinary pitch. Placed before an outline map of the United States, she seems tolerably well acquainted with most of our geographical features, answering in a clear, audible voice. She counts fifteen understandingly, makes straight lines on the slate, threads beads with reference to color, and desires little forms for them when her string is completed. Mentally, she is a progressing child of four years, instead of eight."

The writer of this notice, now Superintendent of the Pennsylvania Training-School, did not present Beckie as an idiot. It results from his description of her that she was like ordinary children, till a diseased condition of the nervous system, of undetermined character, stopped all progress, at the same time obliterating incipient speech. This would class her among imbeciles, if some subsequent symptoms did not seem to indicate a vague tendency to moral insanity.

The following case, like the three preceding ones, would be more valuable for our instruction, but not more commendable for those who had charge of it, if its primordial characters were better delineated. We take it, partly from the report of the institution of Barre, Mass., and partly from private correspondence.

OBS. LVI.—"Case No. 6.—A youth, æt. 17, good physical development, well-formed head, and pleasant countenance. After many fruitless attempts, it was decided that he could gain no knowledge from books beyond his letters. There was no desire to learn nor ambition to be anything; no habits of application, no moral power to restrain him.

from evil, very little strength of will. His conversation showed some proper ideas of common things; but his judgment, understanding, and reflection were sadly behind his years; and it was the opinion of his friends that he would never be able to take care of himself without guardianship.

“Three years of discipline have shown that he is fully capable of gaining an ordinary education. Though his advanced age has rendered the undertaking more difficult for both himself and teacher, he has made more rapid progress than could have been expected in general intelligence and information, enlarged power of reflection, enjoyment of reading, recognition of moral principles, knowledge of biblical tracts, genuine practicality, power of imitation, skill to construct and make himself generally useful. He feels more reliance upon himself, has increased self-esteem, wishes to be well thought of, to be a man capable of earning his living. He will doubtless be competent for sustaining creditably all the social relations of life in a few years.”

We are indebted to Mrs Brown, the wife of the superintendent, and herself one of the most competent persons engaged in the practical treatment of idiots, for the sequel of the history of this interesting young man :

“BARRE, January 22, 1866.

“The person described above remained in our school six years, devoting a part of each year to manual labor on the farm, in the stable or shop; learning in each department to make himself useful. At the end of that period he had acquired a good common education, manly inde-

pendence, and a good moral character. For a year he was employed as attendant at the institution for a class of six boys, discharging his duties with diligence and fidelity. When the war broke out (1861) he entered the navy as gunner's mate on board the *Ossipee*; was afterwards transferred to the *Cumberland* and thence to the *Brooklyn*, on which he served during the remainder of the war. From letters recently received from him we learn that he is married, and is now mate of a merchant-ship plying between Boston and Liverpool. I do not hesitate to say that this worthy, useful man would have been wholly lost to society, or worse, made the dupe or instrument of villainy, had he not enjoyed the beneficial effects of our peculiar mode of education."

Our last sketches will be written *in memoriam* of those who have passed from idiocy to heroism.

Among the inmates of the American schools for idiots, several, whose primary condition is not accurately recorded, but whose idiocy, more or less profound, or superficial idiocy, is beyond cavil, enlisted to defend the Republic.

Obs. LVII. T. P., formerly from the Penn. Training-School, and apprenticed to the shoemaking business, entered the army, performed good service as a soldier, was captured in General Grant's move through the Wilderness, and died at the Andersonville prison-pens.

From the N. Y. State Institution, Charles Piper enlisted the day he was 21 years of age, of his own impulse, thus asserting his claim to manliness. Lorenzo Scott, incapable of education in other schools, had learned in that of

Syracuse to speak, read, and write well ; had acquired habits of industry, and such capacity for labor, that he not only was very useful in farming operations, but in the nicer labors connected with the garden ; where in 1862, before leaving the asylum, he took almost the sole care of the grape-vines. He too enlisted, moved by an intelligent patriotism. Both Piper and Scott belong already to the history and poetry of our time. After six months' duties, Charles was smitten by typhoid fever, and wanted to go home. Home for him was the asylum. At its doors he was found dying, and all the tender nursing he received could only revive him for a few days. Lorenzo served for two years ; at Gettysburg, where his bravery was acknowledged by his officers, and in the battle of the Wilderness, where he was severely wounded ; on that occasion he is reported to have ran away from the hospital to join his comrades in the Army of the James. And lastly, transferred to the Shenandoah Valley, he was fatally wounded at Fisher's Hill, and now sleeps at Winchester. Before his death, he expressed in good writing his will that everything belonging to him, and particularly his money, should be remitted to Charley, the son of the Superintendent of the Institution where he had been educated. But relatives who had never previously inquired for him, inquired for his money and divided it among themselves, unable to sign their receipts otherwise than with "their mark."

By their life and death, these once abandoned children, reclaimed to society-life by science and practical Christianity, showed that the institution for idiots can already

develop the noblest sentiments of man, Friendship, Gratitude, love of Home, and Devotion to one's Country. Where is the artist who will paint for the asylum of Syracuse the starting of the two volunteers and the dying return of Piper home? Those pictures would be as touching and appropriate there as is the masterpiece of Sir Benjamin West in the Pennsylvania Hospital for the Insane.

It would be easy to present more of these observations, since we have kindly received more of them from the Superintendents of the schools of New York, Pennsylvania, Kentucky, and Barre, Mass., or more are to be found in periodicals. But they would not offer themselves naturally as illustrations of some points of doctrine of the present book, as those here selected are intended to do closely; the latter are numerous enough to represent idiocy in its most important aspects; and incomplete enough, particularly our own, to make them stand like a stimulus for the friends of idiots to do better. *PROGRESS is in proportion to the thoroughness of observation.*

